



Town of Arlington Notice of Meeting

In accordance with the provisions of Massachusetts General Laws,
Chapter 39, Section 23B, notice is hereby given of a meeting of the:

Finance Committee

Wednesday, February 16,
2022

7:30 p.m. – 10 p.m.

Conducted by Remote Participation - Zoom Meeting

AGENDA ITEMS:

1. 7:30 PM Virtual Open Meeting protocol and roll call
2. 7:40 PM Chair's Comments
3. 7:45 PM Minutes for approval
4. 7:50 PM Budget Review
 1. (19) Police, (20) Fire (Harmer, Wallach)
 2. (14) Planning, (15) Redevelopment (McKenna, Migliazzo)
 3. (6) Comptroller, (9) Board of Assessors, (25) Retirement, (27) Reserve Fund (Tosti, Beck, Kellar)
 4. Reclassification & Pay Schedule (Healy)
5. 9:50 PM New business
6. 10:00 PM Adjourn

Register in advance for this meeting: https://town-arlington-ma-us.zoom.us/meeting/register/tZUrde-trzgrHdUyB_9nmKfnpUVaikBCWIs9

After registering, you will receive a confirmation email containing information about joining the meeting.

Members of the public are asked to send written comments to tbradley@town.arlington.ma.us

Documents regarding agenda items will be made available via the Town's website.

Information regarding Order Suspending Certain Provisions of the Open Meeting Law:
<https://www.mass.gov/doc/order-suspending-certain-provision-of-open-meeting-law/download>

By Charlie Foskett, Chairman Finance Committee

Non-Contributory Budget

			<u>7/1/2022</u>	<u>Fy 23</u>			Projected	
					<u>2021-2022</u>	Projected	<u>7/1/22-6/30/23</u>	
<u>First Name</u>	<u>Last Name</u>	<u>Position</u>	<u>Opt.</u>	<u>Weekly</u>	<u>Yearly</u>	<u>FY23 Weekly</u>	<u>Yearly</u>	<u>Status</u>
Lousie	Welch	N/A	N/A	372.44	\$19,366.88	\$381.09	\$19,816.88	Surv.
				\$372.44	\$19,366.88	\$381.09	\$19,816.88	
					<u>Payroll</u>	<u>OPEB</u>		
1 non-contribs		FY23	Budget	Request	\$19,816.88	\$481,983.60	Project Proposal	
		FY22	Budget	Request	\$19,366.88	\$481,983.60		
		FY 21	Budget	Request	\$18,917.08	\$481,983.40		
		FY 20	Budget	Request	\$18,467.48	\$481,983.00		
		FY 19	Budget	Request	\$18,017.16	\$481,982.84		
		FY 18	Budget	Request	\$55,321.12	\$444,678.88		
		FY17	Budget	Request	\$87,000.00	\$413,000.00		
		FY16	Budget	Request	\$87,000.00	\$413,000.00		
		FY 15	Budget	Request	\$96,048.20	\$403,951.80		
		FY14	Budget	Request	\$107,000.08	\$392,999.92		
		FY13	Budget	Request	\$107,123.08	\$392,876.92		
		FY12	Budget	Request	\$110,572.28	\$389,427.72		
		FY11	Budget	Request	\$156,686.92	\$343,313.08		
		FY10	Budget	Request	\$156,686.92	\$343,313.08		
		FY09	Budget	Request	\$173,894.60	\$326,105.40		
		FY08	Budget	Request	\$189,776.79	\$310,223.21		
						\$3,728,211.13		

Meketa Allocation 11/31/2021



Town of Arlington OPEB Trust

Total Trust | As of November 30, 2021

Allocation vs. Targets					
	Current Balance	Current Allocation	Policy	Policy Range	Within IPS Range?
US Equity	\$6,250,129	28.2%	26.0%	21.0% - 31.0%	Yes
Developed Market Equity	\$4,863,107	22.0%	23.0%	18.0% - 28.0%	Yes
Emerging Market Equity	\$2,862,674	12.9%	14.0%	9.0% - 19.0%	Yes
Investment Grade Bonds	\$2,842,952	12.8%	13.0%	10.0% - 16.0%	Yes
Short-Term Investment Grade Bonds	\$849,363	3.8%	4.0%	1.0% - 7.0%	Yes
TIPS	\$2,471,147	11.2%	11.0%	8.0% - 14.0%	Yes
High Yield Bonds	\$1,993,251	9.0%	9.0%	6.0% - 12.0%	Yes
Total	\$22,132,624	100.0%	100.0%		

Meketa 11/30/2021



Town of Arlington OPEB Trust

Total Trust | As of November 30, 2021

Trailing Net Performance												
	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Trust	22,132,624	100.0	--	-1.8	0.9	7.8	11.9	11.9	9.8	8.2	7.8	Dec-10
<i>Custom Benchmark</i>				<i>-1.9</i>	<i>0.6</i>	<i>7.4</i>	<i>11.2</i>	<i>12.0</i>	<i>10.0</i>	<i>8.4</i>	<i>7.9</i>	<i>Dec-10</i>
Domestic Equity Assets	6,250,129	28.2	28.2	-1.5	5.1	21.1	26.5	20.2	17.6	15.9	15.1	Dec-10
<i>Spliced Total Stock Market Index</i>				<i>-1.5</i>	<i>5.1</i>	<i>21.1</i>	<i>26.5</i>	<i>20.3</i>	<i>17.6</i>	<i>16.0</i>	<i>15.1</i>	<i>Dec-10</i>
Vanguard Total Stock Market	6,250,129	28.2	100.0	-1.5	5.1	21.1	26.5	20.2	17.6	15.9	15.1	Dec-10
<i>Spliced Total Stock Market Index</i>				<i>-1.5</i>	<i>5.1</i>	<i>21.1</i>	<i>26.5</i>	<i>20.3</i>	<i>17.6</i>	<i>16.0</i>	<i>15.1</i>	<i>Dec-10</i>
International Developed Markets Equity Assets	4,863,107	22.0	22.0	-4.7	-1.7	6.3	12.5	10.6	9.7	7.2	5.7	Dec-10
<i>Spliced Developed (ex. U.S.) Index</i>				<i>-4.9</i>	<i>-2.4</i>	<i>6.2</i>	<i>11.9</i>	<i>10.7</i>	<i>9.6</i>	<i>7.9</i>	<i>6.7</i>	<i>Dec-10</i>
Vanguard Developed Markets Index	4,863,107	22.0	100.0	-4.7	-1.7	6.3	12.5	10.6	9.7	--	6.4	Aug-13
<i>Spliced Developed (ex. U.S.) Index</i>				<i>-4.9</i>	<i>-2.4</i>	<i>6.2</i>	<i>11.9</i>	<i>10.7</i>	<i>9.6</i>	<i>7.9</i>	<i>6.4</i>	<i>Aug-13</i>
International Emerging Markets Equity Assets	2,862,674	12.9	12.9	-3.2	-2.1	-0.9	5.0	10.1	9.0	--	5.4	Aug-13
<i>Spliced Emerging Markets Index</i>				<i>-3.3</i>	<i>-2.2</i>	<i>-0.3</i>	<i>5.7</i>	<i>10.5</i>	<i>9.2</i>	<i>5.2</i>	<i>5.5</i>	<i>Aug-13</i>
Vanguard Emerging Markets	2,862,674	12.9	100.0	-3.2	-2.1	-0.9	5.0	10.1	9.0	--	5.4	Aug-13
<i>Spliced Emerging Markets Index</i>				<i>-3.3</i>	<i>-2.2</i>	<i>-0.3</i>	<i>5.7</i>	<i>10.5</i>	<i>9.2</i>	<i>5.2</i>	<i>5.5</i>	<i>Aug-13</i>
Investment Grade Bonds Assets	2,842,952	12.8	12.8	0.3	0.3	-1.3	-1.1	5.6	3.7	3.0	3.2	Dec-10
<i>Bloomberg US Aggregate TR</i>				<i>0.3</i>	<i>0.3</i>	<i>-1.3</i>	<i>-1.2</i>	<i>5.5</i>	<i>3.7</i>	<i>3.0</i>	<i>3.3</i>	<i>Dec-10</i>
Vanguard Total Bond Market Index	2,842,952	12.8	100.0	0.3	0.3	-1.3	-1.1	5.6	3.7	3.0	3.2	Dec-10
<i>Bloomberg US Aggregate TR</i>				<i>0.3</i>	<i>0.3</i>	<i>-1.3</i>	<i>-1.2</i>	<i>5.5</i>	<i>3.7</i>	<i>3.0</i>	<i>3.3</i>	<i>Dec-10</i>

FY 2023 Funding Schedule

ARLINGTON RETIREMENT SYSTEM

FUNDING SCHEDULE with 3(8)(C) - 11 years: 5.50% increases

RP-2014 adjusted to 2006, projected generationally using MP-2020, 7.00% Discount Rate, New salary scale

Fiscal Year	Normal Cost	Unfunded Liability*	Funding Amortization of UAAL	Net 3(8)(c) Payments	Schedule Contribution**	% Change
2023	3,035,221	134,612,827	12,485,966	(89,645)	15,431,542	5.50%
2024	3,171,806	129,071,859	13,198,116	(89,645)	16,280,277	5.50%
2025	3,314,537	118,850,594	13,950,800	(89,645)	17,175,692	5.50%
2026	3,463,691	110,347,745	14,746,309	(89,645)	18,120,355	5.50%
2027	3,619,557	102,293,537	15,587,062	(89,645)	19,116,975	5.50%
2028	3,782,438	92,775,928	16,475,616	(89,645)	20,168,408	5.50%
2029	3,952,647	81,641,334	17,414,669	(89,645)	21,277,671	5.50%
2030	4,130,516	68,722,532	18,407,071	(89,645)	22,447,943	5.50%
2031	4,316,390	53,837,543	19,455,835	(89,645)	23,682,580	5.50%
2032	4,510,627	36,788,427	20,564,139	(89,645)	24,985,121	5.50%
2033	4,713,605	17,359,988	17,359,988	(89,645)	21,983,949	-12.01%
2034	4,925,718	-	-	(89,645)	4,836,073	-78.00%

Amortization of Unfunded Liability as of July 1, 2022

Year	Type	Original Amort. Amount	Percentage Increasing	Original # of Years	Current Amort. Amount	Years Remaining
2023	Fresh Start	N/A	N/A	11	N/A	11

* Includes recognition of the following asset gains/(losses) in Fiscal 2024 through 2026:

2024	\$1,603,883
2025	\$5,134,310
2026	\$1,895,035

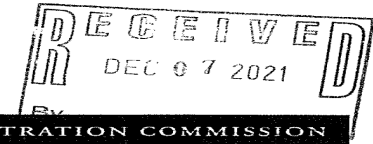
** Contributions are set to be the amount resulting from a 5.5% increase on the prior year's contribution. The contribution in FY2033 decreases by -12.01%.

3-8-C's

		<u>38C Update</u>			
<u>Year</u>	<u>For</u>	<u>Before Protest</u>	<u>After Protest</u>	<u>Savings</u>	
2011	2010	\$92,195.58	\$17,989.01	\$74,206.57	
2012	2011	\$90,130.36	\$17,855.64	\$72,274.72	
2013	2012	\$145,502.17	\$39,770.11	\$105,732.06	
2014	2013	\$155,964.75	\$41,876.62	\$114,088.13	
2015	2014	\$156,462.44	\$43,775.25	\$112,687.19	
2016	2015	\$196,894.19	\$68,066.07	\$128,828.12	
2017	2016	\$239,017.47	\$86,014.72	\$153,002.75	
2018	2017	\$252,875.03	\$88,298.98	\$164,576.05	
2019	2018	\$257,347.41	\$89,872.90	\$167,474.51	
2020	2019	\$295,788.45	\$103,468.54	\$192,319.91	
2021	2020	\$406,585.52	\$178,813.15	\$227,772.37	
		\$2,288,763.37	\$775,800.99	\$1,512,962.38	
Minuteman not included					
246,000			With Minuteman	\$1,758,962.38	
Updated 1/4/2022					

FY 2023 Appropriation Letter

PERAC



COMMONWEALTH OF MASSACHUSETTS | PUBLIC EMPLOYEE RETIREMENT ADMINISTRATION COMMISSION

PHILIP Y. BROWN, ESQ., *Chairman*

JOHN W. PARSONS, ESQ., *Executive Director*

Auditor SUZANNE M. BUMP | KATHLEEN M. FALLON | KATE FITZPATRICK | JAMES M. MACHADO | RICHARD MACKINNON, JR. | JENNIFER F. SULLIVAN

MEMORANDUM

TO: Arlington Retirement Board
FROM: John W. Parsons, Esq., Executive Director
RE: Appropriation for Fiscal Year 2023
DATE: November 30, 2021

Required Fiscal Year 2023 Appropriation: **\$15,431,542**

This Commission is hereby furnishing you with the amount to be appropriated for your retirement system for Fiscal Year 2023 which commences July 1, 2022.

Attached please find summary information based on the present funding schedule for your system and the portion of the Fiscal Year 2023 appropriation to be paid by each of the governmental units within your system.

The current schedule is due to be updated by Fiscal Year 2024.

If you have any questions, please contact PERAC's Actuary, John Boorack, at (617) 666-4446 Extension 935.

JWP/jfb
Attachments

cc: Town Manager
Town Meeting
c/o Town Clerk

p:\actuarial\approp\approp23\fy23 for web\arlington approp 23.docx



FY 2023 Appropriation Breakdown Letter

Arlington Retirement Board
Appropriation by Governmental Unit

Fiscal Year 2023 - July 1, 2022 to June 30, 2023

Aggregate amount of appropriation: **\$15,431,542**

UNIT	Percent of Aggregate Amount	Funding Schedule (excluding ERI)	ERI	Total Appropriation
Town and School	96.21%	\$14,846,687	\$0	\$14,846,687
Arlington Housing Authority	3.79%	\$584,855	\$0	\$584,855
UNIT TOTAL	100%	\$15,431,542	\$ 0	\$15,431,542

The Total Appropriation column shown above is in accordance with your current funding schedule and the scheduled payment date(s) in that schedule. Whenever payments are made after the scheduled date(s), the total appropriation should be revised to reflect interest at the rate assumed in the most recent actuarial valuation. Payments should be made before the end of the fiscal year.

PRIM's PRIT Fund Performance 2021

PENSION RESERVES INVESTMENT TRUST SUMMARY OF PLAN PERFORMANCE RATES OF RETURN (GROSS OF FEES) Periods Ending December 31, 2021											
	NAV \$ (000)	Target Allocation Range	Actual Allocation %	Month	QTD	FY '22	1 Year	3 Year	5 Year	10 Year	Since Inception
GLOBAL EQUITY	43,070,864	34 - 44%	41.7%	4.04	6.20	5.30	19.22	20.66	14.73	12.31	7.48
CORE FIXED INCOME	15,650,486	12 - 18%	15.1%	-0.74	1.62	2.35	0.18	7.72	5.51	4.74	7.20
VALUE ADDED FIXED INCOME	6,761,207	5 - 11%	6.5%	0.90	1.73	4.70	11.49	8.48	7.19	6.23	7.99
PRIVATE EQUITY	17,167,285	11 - 17%	16.6%	3.22	9.97	25.36	66.23	33.20	29.62	23.37	16.54
REAL ESTATE	8,975,919	7 - 13%	8.7%	7.19	8.16	15.43	28.06	12.91	10.61	11.22	7.12
TIMBERLAND	2,952,517	1 - 7%	2.9%	7.16	6.90	6.69	11.58	5.20	5.34	6.02	8.18
PORTFOLIO COMPLETION STRATEGIES	8,042,304	7 - 13%	7.8%	0.83	1.23	1.63	8.78	5.67	4.59	5.14	4.45
OVERLAY	631,092	0.0%	0.6%	1.86	1.83	1.28	6.15	10.53	7.02		5.99
TOTAL CORE	103,328,033	100%	100%	3.03	5.53	8.15	20.61	16.55	12.84	10.98	9.78
IMPLEMENTATION BENCHMARK (using short term private equity benchmark and private debt returns) ¹				3.29	4.60	6.36	17.65	15.36	11.95	10.15	10.08
TOTAL CORE BENCHMARK (using private equity and private debt benchmark) ²				2.42	4.02	4.46	11.99	12.98	10.12	8.94	9.75
PARTICIPANTS CASH	835,220			0.01	0.02	0.03	0.07	0.99	1.23	0.73	3.49
TEACHERS' AND EMPLOYEES' CASH	103,778			0.01	0.02	0.03	0.07	0.98	1.22	0.72	2.34
TOTAL FUND	104,267,031			3.01	5.51	8.12	20.54	16.50	12.80	10.95	9.82

PRIT - Arlington



Pension Reserves Investment Management Board

84 State Street, Suite 250
Boston, Massachusetts 02109

Deborah B. Goldberg, Treasurer and Receiver General, Chair
Michael G. Trotsky, CFA, Executive Director

Arlington Retirement System General Allocation Account

December 01, 2021 to December 31, 2021

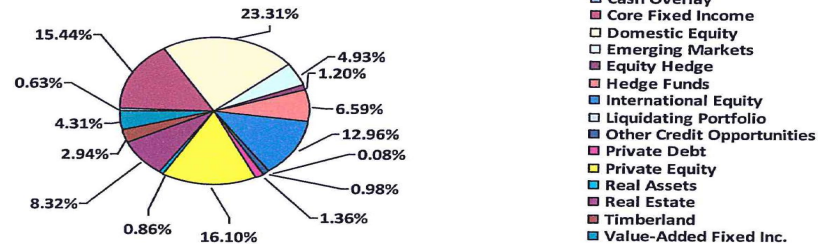
	Month To Date	Fiscal Year To Date	Calendar Year To Date
Your beginning net asset value for the period was:	215,796,974.00	197,982,019.90	184,980,257.36
Your change in investment value for the period was:	6,358,925.07	16,131,602.21	36,333,364.75
Your exchanges from (to) the Cash Fund for the period were:	(1,200,000.00)	6,842,276.96	(357,723.04)
Your ending net asset value for the period was:	220,955,899.07	220,955,899.07	220,955,899.07
Net Change in Investment Value represents the net change through investment activities as follows:			
Gross Investment Income:	531,384.02	2,402,410.00	4,697,857.37
Less Management Fees:	(185,520.24)	(529,041.16)	(1,000,262.72)
Net Investment Income:	345,863.78	1,873,368.84	3,697,594.65
Net Fund Unrealized Gains/Losses:	4,492,866.52	6,425,602.51	17,036,423.01
Net Fund Realized Gains/Losses:	1,520,194.77	7,832,630.86	15,599,347.09
Net Change in Investment Value as Above:	6,358,925.07	16,131,602.21	36,333,364.75

As of December 31, 2021 the net asset value of your investment in the PRIT Fund was:

\$220,955,899.07

PRIT Fund Core Asset Allocation

As of December 31, 2021



If you have any questions regarding your statement, please contact the Client Services team at clientservice@mapension.com.

A detailed statement of your account is attached to this summary sheet.

Custodial Statement 12/31/2021



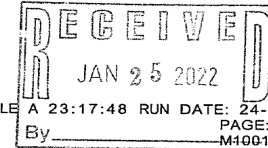
TRDP3U P3UG00000000 MONTHLY FINAL 231743

P3U G000000
ARLINGTON CONTRIBUTORY
ARLINGTON CONTRIBUTORY

INVESTMENT SUMMARY

31 DECEMBER 2021

2021-12-31 CYCLE



A 23:17:48 RUN DATE: 24-JAN-22
PAGE: 1

INVESTMENT DISTRIBUTION

	<u>COST</u>	<u>MARKET VALUE</u>	<u>UNREALIZED GAIN/LOSS</u>
CASH EQUIVALENTS	4,135,633.41	4,135,633.41	0.00
EQUITY	220,955,899.07	220,955,899.07	0.00
PRIVATE EQUITY	529,227.89	529,227.89	0.00
TOTAL INVESTMENTS	225,620,760.37	225,620,760.37	0.00

2022 Expense Budgets

	2019	2020	2021	2022
<u>Salaries</u>				
Board Members (5)	\$22,500	\$22,500	\$22,500	\$22,500
Custodian of Funds	\$3,000	\$3,000	\$3,000	\$3,000
<u>Staff</u>				
Retirement Administrator	\$108,628	\$110,801	\$111,909	\$122,466
Assistant Administrator	\$59,031	\$60,212	\$64,000	\$65,600
Overtime, Temp	\$2,500	\$2,500	\$2,500	\$2,500
Longevity	\$5,620	\$6,335	\$7,676	\$8,179
<u>Other Expenses</u>				
Legal	\$13,500	\$12,000	\$11,000	\$9,000
Supplies	\$7,000	\$7,000	\$7,000	\$7,000
Postage	\$8,000	\$8,000	\$8,000	\$8,000
Meetings & Dues	\$14,000	\$13,000	\$13,000	\$12,000
Insurance	\$12,000	\$13,000	\$14,100	\$14,275
Medical Expenses	\$700	\$700	\$800	\$750
Office Equipment	\$8,000	\$8,000	\$6,000	\$6,000
Service Contracts			\$4,900	\$5,000
Pension Technology	\$25,000	\$26,660	\$27,985	\$29,375
Employee Portal PTG	\$3,300	\$3,150	\$3,150	\$3,150
PTG Scanning	\$4,000	\$4,000	\$4,000	\$4,000
Rent	\$16,000	\$15,000	\$18,759	\$19,200
Powers and Sullivan	\$4,000	\$4,000	\$4,000	\$4,000
<u>Consulting & Fees</u>				
Actuarial valuation	\$25,000	\$26,000	\$15,175	\$15,250
Actuarial OPEB			\$10,000	\$9,000
OPEB consulting	\$28,000	\$28,000	\$31,000	\$31,000
Health Ins/Staff	\$41,000	\$49,920	\$46,010	\$48,311
Total				
Actuarial Budget	\$410,779	\$423,777	\$436,463	\$449,555
		3.16%	2.99%	3.00%
<u>Investment</u>				
Alt. investments IV	\$5,000	\$5,000	\$0	\$0
Alt. investments VII	\$37,500	\$17,500	\$17,500	\$17,500
Custodian	\$17,000	\$18,000	\$18,000	\$18,000
PRIT	\$864,000	\$918,000	\$982,800	\$1,258,200
Total Investment				
Mgmt Budget	\$923,500	\$958,500	\$1,018,300	\$1,293,700
Total				
Operating Budget	\$1,334,279	\$1,382,277	\$1,454,763	\$1,743,255
		3.47%		

OPEB SUMMARY REPORT

Commonwealth, Cities, and Towns

December, 2021

Commission Members

Philip Y. Brown, Esq.

Chair

The Honorable Suzanne M. Bump

Auditor of the Commonwealth

Vice Chair

Kathleen M. Fallon

Practice Area Director, Public Consulting Group

Kate Fitzpatrick

Town Manager, Town of Needham

James M. Machado

Sergeant, Fall River Police Department

Richard MacKinnon, Jr.

President, Professional Firefighters of Massachusetts

Jennifer F. Sullivan

Investment Professional

John W. Parsons, Esq.

Executive Director

John Boorack

Actuary

James Lamenzo

Actuarial Consultant

Public Employee Retirement Administration Commission

Five Middlesex Avenue

Suite 304

Somerville, MA 02145

Phone 617 666 4446

Fax 617 628 4002

TTY 617 591 8917

Web www.mass.gov/perac



OPEB SUMMARY REPORT | Commonwealth, Cities, and Towns

December 2021 report based on most recent actuarial valuations or disclosure provided. Dollars in thousands.
See report footnotes on page 11.

Entity	Measurement Date	Total OPEB Liability	Fiduciary Net Position	Net OPEB Liability	Funded Ratio	Blended Discount Rate
Commonwealth	6/30/20	\$22,105,511	\$1,414,312	\$20,691,199	6.4%	2.28%
Abington	6/30/20	\$80,834	\$274	\$80,560	0.3%	2.75%
Acton	12/31/20	\$22,947	\$7,661	\$15,286	33.4%	7.00%
Acushnet	6/30/19	\$18,644	\$0	\$18,644	0.0%	3.50%
Adams	6/30/20	\$14,594	\$0	\$14,594	0.0%	2.66%
Agawam	6/30/20	\$206,123	\$984	\$205,139	0.5%	2.21%
Alford	no plan					
Amesbury	6/30/21	\$117,339	\$0	\$117,339	0.0%	3.75%
Amherst	6/30/20	\$75,162	\$7,308	\$67,854	9.7%	7.30%
Andover	6/30/20	\$132,109	\$14,978	\$117,131	11.3%	6.00%
Aquinnah	6/30/20	\$4,190	\$566	\$3,624	13.5%	2.49%
Arlington	6/30/19	\$208,494	\$14,522	\$193,972	7.0%	4.02%
Ashburnham	6/30/19	\$4,825	\$155	\$4,670	3.2%	3.51%
Ashby	no plan					
Ashfield	6/30/20	\$574	\$13	\$561	2.2%	3.25%
Ashland	6/30/21	\$66,944	\$4,772	\$62,172	7.1%	4.00%
Athol	6/30/20	\$16,960	\$391	\$16,570	2.3%	4.75%
Attleboro	6/30/19	\$251,108	\$565	\$250,543	0.2%	3.51%
Auburn	6/30/19	\$31,668	\$4,711	\$26,956	14.9%	7.50%
Avon	6/30/20	\$17,125	\$1,582	\$15,544	9.2%	6.25%
Ayer	6/30/20	\$13,018	\$2,883	\$10,135	22.1%	7.00%
Barnstable	6/30/19	\$172,677	\$4,782	\$167,895	2.8%	3.50%
Barre	6/30/20	\$3,812	\$43	\$3,769	1.1%	3.25%
Becket	6/30/19	\$5,008	\$0	\$5,008	0.0%	3.50%
Bedford	6/30/21	\$64,116	\$13,604	\$50,512	21.2%	6.80%
Belchertown	6/30/21	\$54,198	\$221	\$53,977	0.4%	2.50%
Bellingham	6/30/20	\$78,236	\$571	\$77,665	0.7%	2.75%
Belmont	6/30/19	\$99,843	\$4,476	\$95,367	4.5%	6.50%
Berkley	6/30/21	\$23,438	\$794	\$22,645	3.4%	2.09%
Berlin †						
Bernardston †						
Beverly	6/30/20	\$398,267	\$1,133	\$397,133	0.3%	2.21%
Billerica	6/30/20	\$263,991	\$5,257	\$258,734	2.0%	7.00%
Blackstone	6/30/21	\$6,773	\$2,233	\$4,540	33.0%	6.80%
Blandford †						
Bolton	6/30/20	\$2,701	\$1,079	\$1,621	40.0%	5.00%

† No information provided as of the date of this report.

OPEB SUMMARY REPORT | Commonwealth, Cities, and Towns

December 2021 report based on most recent actuarial valuations or disclosure provided. Dollars in thousands.
See report footnotes on page 11.

Entity	Measurement Date	Total OPEB Liability	Fiduciary Net Position	Net OPEB Liability	Funded Ratio	Blended Discount Rate
Boston	6/30/21	\$3,058,539	\$862,136	\$2,196,403	28.2%	6.25%
Bourne	6/30/20	\$137,358	\$3,653	\$133,705	2.7%	2.21%
Boxborough	6/30/20	\$3,975	\$849	\$3,126	21.4%	7.00%
Boxford	6/30/20	\$14,308	\$3,035	\$11,274	21.2%	7.00%
Boylston	6/30/20	\$7,062	\$136	\$6,926	1.9%	2.21%
Braintree	6/30/20	\$155,340	\$10,361	\$144,979	6.7%	7.00%
Brewster	6/30/19	\$18,271	\$1,961	\$16,310	10.7%	7.25%
Bridgewater	6/30/21	\$44,736	\$850	\$43,885	1.9%	3.50%
Brimfield	6/30/20	\$5,019	\$77	\$4,942	1.5%	3.75%
Brockton	6/30/20	\$847,437	\$0	\$847,437	0.0%	2.66%
Brookfield †						
Brookline	6/30/20	\$285,411	\$59,089	\$226,322	20.7%	7.00%
Buckland	6/30/20	\$1,137	\$22	\$1,114	2.0%	2.75%
Burlington	6/30/18	\$105,997	\$7,495	\$98,502	7.1%	7.25%
Cambridge	6/30/19	\$731,595	\$18,422	\$713,172	2.5%	3.67%
Canton	6/30/21	\$95,935	\$9,066	\$86,869	9.5%	6.25%
Carlisle	6/30/20	\$20,321	\$0	\$20,321	0.0%	2.66%
Carver	6/30/20	\$38,546	\$1,457	\$37,089	3.8%	6.50%
Charlemont †						
Charlton	6/30/19	\$13,447	\$895	\$12,552	6.7%	3.68%
Chatham	6/30/19	\$20,725	\$1,023	\$19,702	4.9%	7.00%
Chelmsford	6/30/21	\$68,434	\$17,251	\$51,183	25.2%	6.75%
Chelsea	6/30/20	\$162,920	\$2,408	\$160,512	1.5%	3.25%
Cheshire	6/30/20	\$2,552	\$4	\$2,548	0.2%	3.25%
Chester †						
Chesterfield	6/30/20	\$705	\$34	\$672	4.8%	3.00%
Chicopee	6/30/20	\$287,682	\$1,026	\$286,655	0.4%	2.23%
Chilmark	6/30/19	\$4,474	\$1,543	\$2,931	34.5%	7.50%
Clarksburg	no plan					
Clinton	6/30/20	\$100,761	\$1,077	\$99,685	1.1%	2.21%
Cohasset	6/30/20	\$76,300	\$3,901	\$72,399	5.1%	2.28%
Colrain	6/30/20	\$260	\$272	-\$12	104.6%	6.75%
Concord	6/30/20	\$59,898	\$21,288	\$38,609	35.5%	6.50%
Conway	6/30/20	\$1,599	\$54	\$1,545	3.4%	3.25%
Cummington	no plan					
Dalton	6/30/20	\$4,496	\$2,528	\$1,967	56.2%	6.75%

† No information provided as of the date of this report.

OPEB SUMMARY REPORT | Commonwealth, Cities, and Towns

December 2021 report based on most recent actuarial valuations or disclosure provided. Dollars in thousands.
See report footnotes on page 11.

Entity	Measurement Date	Total OPEB Liability	Fiduciary Net Position	Net OPEB Liability	Funded Ratio	Blended Discount Rate
Danvers (excluding Electric Light)	6/30/20	\$217,825	\$4,244	\$213,581	1.9%	2.23%
Dartmouth	6/30/20	\$69,103	\$3,359	\$65,744	4.9%	6.00%
Dedham	6/30/20	\$77,336	\$21,885	\$55,451	28.3%	7.50%
Deerfield	6/30/20	\$11,152	\$85	\$11,067	0.8%	3.75%
Dennis	6/30/18	\$32,814	\$784	\$32,030	2.4%	3.87%
Dighton	6/30/20	\$5,696	\$1,274	\$4,421	22.4%	6.75%
Douglas	6/30/20	\$26,398	\$854	\$25,544	3.2%	2.66%
Dover	6/30/20	\$10,424	\$5,737	\$4,687	55.0%	6.25%
Dracut	6/30/20	\$163,452	\$631	\$162,821	0.4%	2.21%
Dudley	6/30/20	\$17,246	\$10	\$17,236	0.1%	2.21%
Dunstable	no plan					
Duxbury	6/30/21	\$45,439	\$4,279	\$41,160	9.4%	6.25%
East Bridgewater	6/30/21	\$92,391	\$134	\$92,257	0.1%	2.25%
East Brookfield †						
East Longmeadow	6/30/21	\$66,887	\$10,029	\$56,859	15.0%	5.25%
Eastham	6/30/19	\$31,114	\$210	\$30,904	0.7%	3.50%
Easthampton	6/30/21	\$44,365	\$1,768	\$42,597	4.0%	4.75%
Easton	6/30/19	\$116,779	\$144	\$116,636	0.1%	3.75%
Edgartown	6/30/20	\$65,225	\$2,571	\$62,654	3.9%	2.23%
Egremont	6/30/20	\$770	\$135	\$635	17.5%	3.25%
Erving	6/30/20	\$6,049	\$4,499	\$1,549	74.4%	6.75%
Essex	6/30/21	\$4,349	\$1,609	\$2,740	37.0%	5.90%
Everett	6/30/20	\$289,938	\$7,383	\$282,556	2.5%	3.75%
Fairhaven	6/30/20	\$39,004	\$1,031	\$37,973	2.6%	6.75%
Fall River	6/30/19	\$482,536	\$101	\$482,434	0.0%	3.75%
Falmouth	6/30/19	\$152,961	\$750	\$152,211	0.5%	3.50%
Fitchburg	6/30/20	\$185,769	\$1,505	\$184,264	0.8%	2.66%
Florida	no plan					
Foxborough	6/30/20	\$38,607	\$10,977	\$27,630	28.4%	7.00%
Framingham	6/30/20	\$414,780	\$6,978	\$407,802	1.7%	2.66%
Franklin	6/30/19	\$74,262	\$5,707	\$68,555	7.7%	7.50%
Freetown	6/30/20	\$13,398	\$1,060	\$12,338	7.9%	6.75%
Gardner	6/30/19	\$113,240	\$70	\$113,170	0.1%	3.50%
Georgetown	6/30/21	\$55,782	\$353	\$55,430	0.6%	2.25%
Gill	6/30/21	\$862	\$90	\$773	10.4%	5.25%
Gloucester	6/30/20	\$213,995	\$628	\$213,367	0.3%	2.25%

† No information provided as of the date of this report.

OPEB SUMMARY REPORT | Commonwealth, Cities, and Towns

December 2021 report based on most recent actuarial valuations or disclosure provided. Dollars in thousands.
See report footnotes on page 11.

Entity	Measurement Date	Total OPEB Liability	Fiduciary Net Position	Net OPEB Liability	Funded Ratio	Blended Discount Rate
Goshen	6/30/20	\$138	\$0	\$138	0.0%	3.00%
Gosnold	no plan					
Grafton	6/30/20	\$83,415	\$130	\$83,286	0.2%	2.21%
Granby	6/30/20	\$34,716	\$680	\$34,036	2.0%	2.75%
Granville †						
Great Barrington	6/30/20	\$20,598	\$0	\$20,598	0.0%	2.21%
Greenfield	6/30/19	\$94,305	\$1,309	\$92,995	1.4%	3.51%
Groton	6/30/21	\$9,648	\$722	\$8,926	7.5%	6.75%
Groveland	6/30/20	\$5,268	\$375	\$4,893	7.1%	5.00%
Hadley	6/30/20	\$8,402	\$1,813	\$6,589	21.6%	6.50%
Halifax	6/30/21	\$17,038	\$503	\$16,536	3.0%	4.00%
Hamilton	6/30/21	\$4,893	\$1,022	\$3,871	20.9%	6.68%
Hampden	6/30/20	\$2,861	\$0	\$2,861	0.0%	2.21%
Hancock	no plan					
Hanover	6/30/20	\$43,496	\$3,475	\$40,021	8.0%	4.75%
Hanson	6/30/21	\$19,267	\$203	\$19,064	1.1%	3.00%
Hardwick	no plan					
Harvard	6/30/20	\$47,240	\$3,925	\$43,314	8.3%	2.37%
Harwich	6/30/19	\$42,322	\$2,441	\$39,881	5.8%	5.85%
Hatfield	6/30/21	\$10,528	\$0	\$10,528	0.0%	2.18%
Haverhill	6/30/20	\$472,763	\$0	\$472,763	0.0%	2.25%
Hawley	no plan					
Heath	no plan					
Hingham (excluding light plant)	6/30/20	\$76,922	\$15,299	\$61,623	19.9%	7.00%
Hinsdale	no plan					
Holbrook	6/30/20	\$56,317	\$1,222	\$55,096	2.2%	4.25%
Holden	6/30/21	\$12,716	\$3,889	\$8,827	30.6%	6.25%
Holland	6/30/20	\$3,172	\$179	\$2,993	5.6%	2.34%
Holliston	6/30/20	\$45,331	\$15,469	\$29,862	34.1%	7.00%
Holyoke	6/30/19	\$224,326	\$0	\$224,326	0.0%	3.50%
Hopedale	6/30/21	\$54,881	\$0	\$54,881	0.0%	2.25%
Hopkinton	6/30/20	\$27,117	\$3,018	\$24,099	11.1%	6.75%
Hubbardston	no plan					
Hudson	6/30/19	\$84,050	\$51	\$83,999	0.1%	2.79%
Hull	6/30/21	\$48,025	\$224	\$47,801	0.5%	2.50%
Huntington	no plan					

† No information provided as of the date of this report.

OPEB SUMMARY REPORT | Commonwealth, Cities, and Towns

December 2021 report based on most recent actuarial valuations or disclosure provided. Dollars in thousands.
See report footnotes on page 11.

Entity	Measurement Date	Total OPEB Liability	Fiduciary Net Position	Net OPEB Liability	Funded Ratio	Blended Discount Rate
Ipswich	6/30/20	\$30,262	\$5,617	\$24,645	18.6%	7.00%
Kingston	6/30/21	\$53,461	\$559	\$52,902	1.0%	2.16%
Lakeville	6/30/20	\$13,271	\$1,516	\$11,754	11.4%	6.75%
Lancaster	6/30/20	\$2,582	\$2,424	\$159	93.8%	7.00%
Lanesborough	6/30/20	\$15,684	\$206	\$15,478	1.3%	2.21%
Lawrence	6/30/20	\$590,976	\$410	\$590,566	0.1%	2.66%
Lee	6/30/20	\$24,698	\$486	\$24,212	2.0%	4.00%
Leicester	6/30/20	\$33,909	\$151	\$33,758	0.4%	3.00%
Lenox	6/30/20	\$22,334	\$5,253	\$17,081	23.5%	7.25%
Leominster	6/30/19	\$172,181	\$33,107	\$139,074	19.2%	7.50%
Leverett †						
Lexington	6/30/19	\$137,586	\$15,774	\$121,812	11.5%	7.50%
Leyden	no plan					
Lincoln	6/30/20	\$33,170	\$10,540	\$22,630	31.8%	7.00%
Littleton	6/30/19	\$28,340	\$12,089	\$16,251	42.7%	7.50%
Longmeadow	6/30/20	\$33,078	\$3,259	\$29,819	9.9%	5.57%
Lowell	6/30/20	\$846,409	\$10,608	\$835,801	1.3%	2.44%
Ludlow	6/30/20	\$90,352	\$369	\$89,983	0.4%	2.75%
Lunenburg	6/30/20	\$56,141	\$375	\$55,766	0.7%	3.00%
Lynn	6/30/19	\$561,091	\$0	\$561,091	0.0%	3.75%
Lynnfield	6/30/20	\$103,681	\$1,452	\$102,229	1.4%	2.45%
Malden	6/30/20	\$266,298	\$0	\$266,298	0.0%	2.75%
Manchester-by-the-Sea	6/30/21	\$8,094	\$3,259	\$4,836	40.3%	7.50%
Mansfield	6/30/21	\$111,924	\$11,053	\$100,871	9.9%	5.50%
Marblehead	6/30/21	\$224,338	\$5,721	\$218,616	2.6%	2.18%
Marion	6/30/20	\$11,477	\$1,849	\$9,628	16.1%	6.50%
Marlborough	6/30/20	\$150,895	\$12,771	\$138,124	8.5%	4.75%
Marshfield	6/30/20	\$104,067	\$466	\$103,601	0.4%	3.00%
Mashpee	6/30/18	\$77,789	\$0	\$77,789	0.0%	3.87%
Mattapoisett	6/30/20	\$11,260	\$3,406	\$7,854	30.2%	6.75%
Maynard	6/30/20	\$70,087	\$1,360	\$68,727	1.9%	2.24%
Medfield	6/30/21	\$32,180	\$5,674	\$26,506	17.6%	7.10%
Medford	6/30/19	\$251,022	\$70	\$250,952	0.0%	3.75%
Medway	6/30/20	\$23,422	\$1,299	\$22,123	5.5%	6.50%
Melrose	6/30/21	\$172,961	\$1,024	\$171,937	0.6%	2.20%
Mendon	6/30/20	\$8,035	\$115	\$7,920	1.4%	2.70%

† No information provided as of the date of this report.

OPEB SUMMARY REPORT | Commonwealth, Cities, and Towns

December 2021 report based on most recent actuarial valuations or disclosure provided. Dollars in thousands.
See report footnotes on page 11.

Entity	Measurement Date	Total OPEB Liability	Fiduciary Net Position	Net OPEB Liability	Funded Ratio	Blended Discount Rate
Merrimac	6/30/20	\$4,103	\$1,798	\$2,305	43.8%	6.75%
Methuen	6/30/21	\$244,273	\$566	\$243,707	0.2%	2.50%
Middleborough	6/30/20	\$109,049	\$1,852	\$107,197	1.7%	4.25%
Middlefield	no plan					
Middleton	6/30/20	\$19,307	\$1,369	\$17,937	7.1%	4.75%
Milford	6/30/20	\$93,121	\$6,419	\$86,701	6.9%	5.50%
Millbury	6/30/20	\$53,790	\$224	\$53,566	0.4%	3.50%
Millis	6/30/21	\$53,644	\$222	\$53,422	0.4%	2.50%
Millville	6/30/19	\$571	\$0	\$571	0.0%	2.79%
Milton	6/30/20	\$172,830	\$1,196	\$171,634	0.7%	3.00%
Monson	6/30/20	\$36,703	\$373	\$36,330	1.0%	2.75%
Montague	6/30/20	\$15,934	\$552	\$15,382	3.5%	2.66%
Monterey †						
Montgomery	no plan					
Mount Washington †						
Nahant	6/30/20	\$4,212	\$0	\$4,212	0.0%	2.90%
Nantucket	6/30/19	\$118,004	\$3,130	\$114,874	2.7%	4.00%
Natick	6/30/19	\$195,123	\$0	\$195,123	0.0%	3.50%
Needham	6/30/19	\$109,487	\$38,605	\$70,882	35.3%	7.00%
New Ashford	no plan					
New Bedford	6/30/20	\$622,946	\$2,044	\$620,903	0.3%	2.50%
New Braintree	no plan					
New Marlborough	no plan					
New Salem	6/30/19	\$371	\$194	\$177	52.2%	6.75%
Newbury	6/30/20	\$6,319	\$369	\$5,950	5.8%	6.00%
Newburyport	6/30/21	\$96,642	\$1,021	\$95,621	1.1%	4.25%
Newton	6/30/19	\$699,424	\$11,817	\$687,607	1.7%	3.50%
Norfolk	6/30/19	\$26,373	\$0	\$26,373	0.0%	3.00%
North Adams	6/30/19	\$88,698	\$0	\$88,698	0.0%	2.75%
North Andover	6/30/20	\$131,210	\$4,168	\$127,042	3.2%	2.75%
North Attleborough	6/30/20	\$145,096	\$3,542	\$141,554	2.4%	5.50%
North Brookfield	6/30/20	\$19,265	\$0	\$19,265	0.0%	2.21%
North Reading	6/30/20	\$101,606	\$1,893	\$99,712	1.9%	2.21%
Northampton	6/30/21	\$159,723	\$3,260	\$156,463	2.0%	3.25%
Northborough	6/30/20	\$40,051	\$3,735	\$36,315	9.3%	6.25%
Northbridge	6/30/20	\$70,503	\$728	\$69,774	1.0%	2.21%

† No information provided as of the date of this report.

OPEB SUMMARY REPORT | Commonwealth, Cities, and Towns

December 2021 report based on most recent actuarial valuations or disclosure provided. Dollars in thousands.
See report footnotes on page 11.

Entity	Measurement Date	Total OPEB Liability	Fiduciary Net Position	Net OPEB Liability	Funded Ratio	Blended Discount Rate
Northfield	6/30/18	\$764	\$132	\$633	17.2%	7.00%
Norton	6/30/20	\$89,000	\$623	\$88,377	0.7%	3.25%
Norwell	6/30/20	\$46,827	\$3,973	\$42,854	8.5%	7.50%
Norwood	6/30/19	\$92,116	\$2,780	\$89,336	3.0%	7.00%
Oak Bluffs	6/30/20	\$54,978	\$327	\$54,651	0.6%	2.21%
Oakham	no plan					
Orange	6/30/21	\$34,674	\$0	\$34,674	0.0%	2.25%
Orleans	6/30/18	\$19,600	\$1,114	\$18,486	5.7%	7.25%
Otis	no plan					
Oxford	6/30/21	\$61,025	\$5,666	\$55,359	9.3%	2.21%
Palmer	6/30/20	\$40,729	\$77	\$40,652	0.2%	3.50%
Paxton	6/30/20	\$3,526	\$0	\$3,526	0.0%	3.50%
Peabody	6/30/20	\$282,744	\$6,538	\$276,206	2.3%	2.25%
Pelham	6/30/20	\$4,879	\$978	\$3,901	20.0%	6.50%
Pembroke	6/30/21	\$70,576	\$1,333	\$69,243	1.9%	5.75%
Pepperell	6/30/20	\$13,168	\$216	\$12,952	1.6%	2.75%
Peru	no plan					
Petersham	no plan					
Phillipston	no plan					
Pittsfield	6/30/20	\$419,645	\$305	\$419,340	0.1%	2.44%
Plainfield	no plan					
Plainville	6/30/21	\$31,399	\$557	\$30,842	1.8%	3.50%
Plymouth	6/30/20	\$994,141	\$6,582	\$987,559	0.7%	2.21%
Plympton	6/30/20	\$4,243	\$317	\$3,926	7.5%	4.25%
Princeton	6/30/21	\$1,613	\$1,031	\$582	63.9%	6.25%
Provincetown	6/30/20	\$25,632	\$4,823	\$20,809	18.8%	7.25%
Quincy	6/30/20	\$775,391	\$3,275	\$772,116	0.4%	2.21%
Randolph	6/30/20	\$170,441	\$1,020	\$169,421	0.6%	3.00%
Raynham	6/30/20	\$21,973	\$448	\$21,525	2.0%	3.50%
Reading	6/30/20	\$73,142	\$6,083	\$67,059	8.3%	7.25%
Rehoboth	6/30/20	\$10,820	\$102	\$10,717	0.9%	2.21%
Revere	6/30/19	\$288,099	\$504	\$287,595	0.2%	2.75%
Richmond	6/30/21	\$6,203	\$405	\$5,798	6.5%	2.50%
Rochester	6/30/20	\$14,627	\$126	\$14,502	0.9%	3.25%
Rockland	6/30/20	\$103,178	\$1,014	\$102,164	1.0%	2.75%
Rockport	6/30/20	\$45,006	\$715	\$44,291	1.6%	2.90%

OPEB SUMMARY REPORT | Commonwealth, Cities, and Towns

December 2021 report based on most recent actuarial valuations or disclosure provided. Dollars in thousands.
See report footnotes on page 11.

Entity	Measurement Date	Total OPEB Liability	Fiduciary Net Position	Net OPEB Liability	Funded Ratio	Blended Discount Rate
Rowe †						
Rowley	6/30/20	\$5,188	\$1,267	\$3,921	24.4%	4.00%
Royalston †						
Russell	6/30/20	\$2,010	\$75	\$1,935	3.7%	2.21%
Rutland	6/30/19	\$4,806	\$308	\$4,498	6.4%	5.00%
Salem	6/30/20	\$190,312	\$3,511	\$186,800	1.8%	2.21%
Salisbury	6/30/19	\$6,690	\$272	\$6,418	4.1%	7.50%
Sandisfield †						
Sandwich	6/30/20	\$134,441	\$958	\$133,483	0.7%	2.21%
Saugus	6/30/19	\$183,601	\$887	\$182,715	0.5%	3.25%
Savoy †						
Scituate	6/30/19	\$105,841	\$1,045	\$104,796	1.0%	3.10%
Seekonk	6/30/20	\$43,966	\$3,151	\$40,815	7.2%	2.27%
Sharon	6/30/21	\$68,786	\$2,066	\$66,721	3.0%	6.75%
Sheffield	no plan					
Shelburne	6/30/19	\$1,051	\$157	\$894	14.9%	3.95%
Sherborn	6/30/20	\$8,648	\$1,670	\$6,978	19.3%	7.00%
Shirley	6/30/20	\$5,988	\$69	\$5,918	1.2%	2.21%
Shrewsbury (includes Electric and Cable Operations)	6/30/20	\$59,291	\$4,937	\$54,354	8.3%	7.50%
Shutesbury	6/30/19	\$2,816	\$558	\$2,259	19.8%	5.25%
Somerset	6/30/20	\$111,020	\$1,867	\$109,153	1.7%	3.50%
Somerville	6/30/20	\$158,014	\$10,397	\$147,618	6.6%	7.50%
South Hadley	6/30/20	\$45,049	\$1,450	\$43,599	3.2%	4.75%
Southampton	6/30/19	\$6,389	\$226	\$6,163	3.5%	7.00%
Southborough	6/30/20	\$33,379	\$1,855	\$31,524	5.6%	6.50%
Southbridge	6/30/20	\$48,854	\$1,562	\$47,292	3.2%	3.50%
Southwick	6/30/20	\$5,727	\$214	\$5,513	3.7%	4.25%
Spencer	6/30/20	\$8,526	\$231	\$8,296	2.7%	2.75%
Springfield	6/30/20	\$1,478,411	\$2,759	\$1,475,652	0.2%	2.44%
Sterling	6/30/20	\$8,737	\$660	\$8,078	7.6%	6.75%
Stockbridge	6/30/21	\$3,720	\$3,835	-\$114	103.1%	6.75%
Stoneham	6/30/21	\$156,587	\$0	\$156,587	0.0%	2.16%
Stoughton	6/30/21	\$198,333	\$346	\$197,987	0.2%	2.25%
Stow	6/30/20	\$7,409	\$590	\$6,819	8.0%	6.50%
Sturbridge	6/30/21	\$17,952	\$1,356	\$16,596	7.6%	2.52%

† No information provided as of the date of this report.

OPEB SUMMARY REPORT | Commonwealth, Cities, and Towns

December 2021 report based on most recent actuarial valuations or disclosure provided. Dollars in thousands.
See report footnotes on page 11.

Entity	Measurement Date	Total OPEB Liability	Fiduciary Net Position	Net OPEB Liability	Funded Ratio	Blended Discount Rate
Sudbury	6/30/20	\$91,748	\$8,556	\$83,192	9.3%	2.30%
Sunderland	6/30/19	\$4,713	\$123	\$4,590	2.6%	4.50%
Sutton	6/30/20	\$60,480	\$1,956	\$58,524	3.2%	2.20%
Swampscott	6/30/20	\$129,488	\$2,396	\$127,092	1.9%	2.36%
Swansea	6/30/20	\$83,432	\$457	\$82,975	0.5%	3.50%
Taunton	6/30/20	\$405,797	\$1,137	\$404,660	0.3%	2.50%
Templeton	6/30/20	\$4,837	\$166	\$4,671	3.4%	5.00%
Tewksbury	6/30/20	\$81,754	\$4,715	\$77,038	5.8%	7.50%
Tisbury	6/30/21	\$43,275	\$2,615	\$40,660	6.0%	2.20%
Tolland †						
Topsfield	6/30/21	\$13,170	\$2,126	\$11,044	16.1%	6.50%
Townsend	no plan					
Truro	6/30/19	\$9,080	\$2,175	\$6,905	24.0%	7.00%
Tyngsborough	6/30/20	\$32,978	\$301	\$32,676	0.9%	4.25%
Tyringham †						
Upton	6/30/20	\$7,848	\$685	\$7,163	8.7%	2.26%
Uxbridge	6/30/20	\$82,880	\$365	\$82,515	0.4%	2.66%
Wakefield (excludes MG&L)	7/1/19	\$74,009	\$16,298	\$57,710	22.0%	7.25%
Wales †						
Walpole	6/30/20	\$51,154	\$4,625	\$46,529	9.0%	6.75%
Waltham	6/30/20	\$744,540	\$0	\$744,540	0.0%	2.50%
Ware	6/30/21	\$26,004	\$1,370	\$24,634	5.3%	4.25%
Wareham	6/30/20	\$106,806	\$1,381	\$105,425	1.3%	3.75%
Warren	6/30/21	\$3,412	\$0	\$3,412	0.0%	2.16%
Warwick	no plan					
Washington	no plan					
Watertown	6/30/19	\$115,371	\$1,381	\$113,990	1.2%	3.75%
Wayland	6/30/20	\$48,991	\$19,113	\$29,878	39.0%	7.00%
Webster	6/30/20	\$33,368	\$145	\$33,223	0.4%	3.25%
Wellesley (includes MLP)	6/30/20	\$132,314	\$75,024	\$57,290	56.7%	6.00%
Wellfleet	6/30/20	\$10,917	\$2,170	\$8,747	19.9%	7.00%
Wendell †						
Wenham	6/30/20	\$4,762	\$203	\$4,558	4.3%	6.25%
West Boylston (includes MLP)	6/30/20	\$33,048	\$1,146	\$31,903	3.5%	2.80%
West Bridgewater	6/30/20	\$41,909	\$650	\$41,260	1.6%	4.00%
West Brookfield	6/30/19	\$1,742	\$222	\$1,521	12.7%	6.50%

† No information provided as of the date of this report.

OPEB SUMMARY REPORT | Commonwealth, Cities, and Towns

December 2021 report based on most recent actuarial valuations or disclosure provided. Dollars in thousands.
See report footnotes on page 11.

Entity	Measurement Date	Total OPEB Liability	Fiduciary Net Position	Net OPEB Liability	Funded Ratio	Blended Discount Rate
West Newbury	6/30/19	\$2,432	\$2,249	\$183	92.5%	7.00%
West Springfield	6/30/20	\$225,557	\$897	\$224,660	0.4%	2.44%
West Stockbridge	6/30/19	\$878	\$0	\$878	0.0%	3.50%
West Tisbury	6/30/20	\$5,297	\$2,640	\$2,657	49.8%	7.00%
Westborough	6/30/19	\$120,541	\$6,282	\$114,260	5.2%	2.79%
Westfield	6/30/20	\$356,040	\$846	\$355,194	0.2%	2.75%
Westford	6/30/20	\$79,260	\$6,206	\$73,054	7.8%	6.50%
Westhampton	6/30/20	\$1,397	\$38	\$1,359	2.7%	3.00%
Westminster	6/30/21	\$8,141	\$164	\$7,978	2.0%	3.00%
Weston	6/30/19	\$69,374	\$19,323	\$50,052	27.9%	7.75%
Westport	6/30/20	\$24,920	\$2,969	\$21,952	11.9%	7.50%
Westwood	6/30/19	\$43,640	\$8,879	\$34,762	20.3%	7.25%
Weymouth	6/30/20	\$462,389	\$4,370	\$458,019	0.9%	2.28%
Whately	6/30/20	\$1,091	\$170	\$921	15.6%	3.25%
Whitman	6/30/20	\$16,104	\$665	\$15,439	4.1%	5.00%
Wilbraham	6/30/20	\$27,474	\$2,203	\$25,270	8.0%	2.21%
Williamsburg	6/30/20	\$3,909	\$18	\$3,891	0.5%	2.66%
Williamstown	6/30/19	\$20,601	\$500	\$20,101	2.4%	3.50%
Wilmington	6/30/21	\$104,084	\$9,964	\$94,120	9.6%	6.25%
Winchendon	6/30/19	\$24,272	\$0	\$24,272	0.0%	3.50%
Winchester	6/30/20	\$112,706	\$3,797	\$108,910	3.4%	5.25%
Winthrop	6/30/20	\$106,482	\$342	\$106,140	0.3%	2.75%
Woburn	6/30/20	\$262,443	\$7,496	\$254,947	2.9%	2.61%
Worcester	6/30/20	\$1,046,834	\$20,506	\$1,026,328	2.0%	2.45%
Worthington	no plan					
Wrentham	6/30/20	\$57,105	\$419	\$56,686	0.7%	2.21%
Yarmouth	6/30/19	\$25,598	\$3,592	\$22,006	14.0%	7.00%

See report footnotes and comments on the next page.

OPEB SUMMARY REPORT | Commonwealth, Cities, and Towns

December 2021 Report based on most recent actuarial valuations or disclosure provided. Dollars in thousands.

Footnotes and Comments:

- PERAC's first *Other Post Employment Benefits (OPEB) Summary Report* was released in 2016. That report reflected Governmental Accounting Standards Board (GASB) requirements at the time. This latest report reflects the current GASB 74 and GASB 75 standards.
- This report reflects the most recent actuarial information for the Commonwealth, cities, and towns that was provided to PERAC as of December 7, 2021. Information received after December 7 will be included in subsequent Summary Reports. In addition, information for other entities that provide OPEB benefits, including school districts, water and light districts, authorities, and collaboratives will be provided in future reports.
- Our report reflects the results provided by over 25 actuarial firms.
- A number of towns indicated that no OPEB benefits were provided by the town or there was no plan and this is noted in the *Summary Report*. A number of towns did not provide us an OPEB valuation report and these towns may or may not have OPEB liabilities. Several towns indicated that there was no recent OPEB study, but the town intended to undertake one in the next two years.
- All dollar amounts are in thousands.
- The Summary report details the Measurement Date, Total OPEB Liability (TOL), Financial Net Position (FNP, or Assets), Net OPEB Liability (TOL less FNP, often referred to as Unfunded Liability), Funded Ratio (TOL/FNP), and Blended Discount Rate. The Blended Discount Rate is the single rate that reflects the present value of projected benefit payments using a long-term expected rate of return for years in which assets are projected to be sufficient to make projected benefit payments, and a tax-exempt high-quality municipal bond rate for years in which assets are projected to not be sufficient to make projected benefit payments. If assets are projected to be sufficient to pay all future projected benefits, the Blended Discount Rate will reflect the long-term expected rate of return. Likewise, if assets are not projected to be sufficient to make any projected benefits, the Blended Discount Rate will reflect the municipal bond rate. If assets are projected to be sufficient to pay only a portion of the projected benefits, the Blended Discount Rate will fall between the two rates.
- The cumulative Total OPEB Liability for all entities that reported is approximately \$56.1 billion. The cumulative Financial Net Position is approximately \$3.3 billion resulting in a cumulative Net OPEB Liability of \$52.8 billion and a funded ratio of 5.9%.
- We maintain a spreadsheet of information regarding OPEB valuations that is constantly updated as we receive additional valuation reports and disclosures. The spreadsheet includes the number of active and retired members, service cost, actuarial assumptions, and certain plan provisions. We may incorporate some of these items in future reports.

Notes on Actuarial Assumptions

Discount Rate

We have shown only the Blended Discount Rate in our Summary Report because it is the interest rate used to determine plan liabilities. The long-term rate of return on assets and the municipal bond rate are not always shown in valuation reports.

Medical Trend

The medical trend assumption varies by plan and by actuary. Initial rates are generally 4.5% – 8.0%. The ultimate trend rate is generally 3.5% – 4.5%. The year in which the ultimate trend is assumed varies widely from 2020 – 2075.

Mortality

All plans (except small plans) use a generational mortality assumption. The vast majority of plans (about 80%) use some version of the RP-2014 mortality table. A much smaller number of plans use a version of the RP-2000 or the Society of Actuaries Pub-2010 mortality tables. As updated reports are submitted, we find that many that previously used RP-2000, have adopted RP-2014. For mortality improvement, most plans reflect a version of the MP scale.

Page intentionally left blank

Page intentionally left blank



January 1, 2021

Actuarial Valuation Report

Arlington Retirement System



stoneconsulting,inc

5 West Mill Street, Suite 4
Medfield, Massachusetts 02052
T: 508.359.9600 • F: 508.359.0190
Jmoreau@stoneconsult.com
Cedgar@stoneconsult.com



November 29, 2021

Arlington Contributory Retirement Board
27 Maple Street
Suite G-11
Arlington, MA 02476

To the Arlington Retirement Board:

Stone Consulting, Inc. has performed a January 1, 2021 actuarial valuation of the Arlington Retirement System. This valuation and report were prepared using generally accepted actuarial principles and practices. To the best of our knowledge, this report is complete and accurate, and the assumptions used represent our best estimate of anticipated experience of the system except where noted in the text.

Stone Consulting, Inc. is completely independent of the Town of Arlington and the Arlington Retirement System. This includes any of its officers and key personnel. Neither we or anyone else closely associated with us has any relationship with the Town of Arlington or the Arlington Retirement System that would impair our independence, other than this or related assignments such as Other Post-Employment Benefits consulting.

We are pleased to present the results of this valuation. If the Retirement Board has any questions on the content of this report, we would be glad to respond. Please note that this report is meant to be used in its entirety. Use of excerpts of this report may result in inaccurate or misleading understanding of the results. The use of these results may not be appropriate for all circumstances.

We, Lawrence Stone and Colin Edgar, are consultants for Stone Consulting, Inc. Lawrence Stone and Colin Edgar are members of the American Academy of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,
STONE CONSULTING, INC.
Actuaries for the Plan

Lawrence B. Stone
Member, American Academy of Actuaries

Colin Edgar
Member, American Academy of Actuaries

TABLE OF CONTENTS

PAGE

Certification Letter

Report Summary	1
Format of the Report	1
Development of Funding Schedule	2
Funding Schedule	3
History of Funding Effort	4
Components of Funding Appropriation	5
Net 3(8)(c) Payments	5
Development of Actuarial Results	6
Net Normal Cost	7
Unfunded Liability	8
Demographic Results	10
History of Demographic Statistics	10
Distribution of Plan Members	11
Assets	13
Actuarial Value of Assets	13
Four-Year Asset Smoothing	14
Funding Ratio	15
Risk	16
Maturity	16
Historical Experience	17
History of Assets and Unfunded Liability	17
History of Unfunded Liability and Covered Payroll	17
Comparative Results	18
APPENDICES	19
Appendix A – Actuarial Methods and Assumptions	19
Appendix B – Summary of Principal Provisions	24
Appendix C – Glossary of Terms	28
PERAC Information Disclosure	29

Report Summary

This report presents the results of the actuarial valuation of the Arlington Retirement System as of January 1, 2021. The valuation was performed at the request of the Retirement Board for the purpose of determining the contribution requirements for Fiscal Year 2023 and beyond.

Summary of Results and Experience

■ Experience and Funding Schedule

The contribution is \$73,135 less than the projected FY2023 contribution from the prior valuation. The schedule is based on annual contribution increases of 5.50%, except for the final year, when it decreases by 12.01%. The length of the funding schedule 11 years, finishing in FY2033, one year earlier than the planned funding schedule from the 2020 valuation.

The funding ratio based on Actuarial Value of Assets increased from 55% to 58%.

■ Assumptions/methodology:

Changes of assumptions reduced the liability by \$1.9 million; \$1.5 million of this was due to an update of the mortality projection scale, and the remaining \$0.4 million is due to a revision of the salary scale. Assumptions and valuation methodology are discussed in Appendix A, beginning on page 19.

Contribution requirements are based on the financial condition of the system as of December 31, 2020, as well as actuarial liability results, which are based on:

- The benefit provisions of M.G.L. Chapter 32 and related statutes;
- The demographics of members in the system (i.e., active and inactive participants, retirees and beneficiaries as of January 1, 2021);
- Economic assumptions regarding salary increases and investment earnings; and
- Other actuarial assumptions (e.g., withdrawals, retirement, death, etc.)

Format of the Report

- The funding schedule is shown on page 3, followed by an explanation of the actuarial results, funding schedule components, and a history of the funding schedules used by the Retirement System.
- Full actuarial valuation results are shown on page 18, with prior results included for comparison. The Arlington Retirement Board conducted their previous actuarial valuation effective January 1, 2020.

Development of Funding Schedule

The funding contribution consists of three parts:

- Net Normal Cost: this is the amount of liability generated by active employees earning another year of service, and includes administrative expense.
- Amortization: this is the amount of the Unfunded Liability that will be paid off by this contribution.
- Net 3(8)(c) Payments: these are benefit payments made to other systems for service earned as a member of the Arlington Retirement System, or paid to Arlington by other systems for service earned with another retirement system.

The appropriation for Fiscal 2023 is as follows:

Net Employer Normal Cost for Fiscal 2023 (including admin. expenses)	\$	3,035,221
Net 3(8)(c) Payments		(89,645)
Amortization		12,485,966
Timing Adjustment*		<u>0</u>
Total Appropriation required for Fiscal 2023	\$	15,431,542

* Contributions are assumed to be made at the beginning of the fiscal year.

NOTE: for all tables in this report, totals may not sum due to rounding.

- The schedule's length is eleven (11) years, finishing in Fiscal Year 2033. This is one year earlier than the end of the funding schedule from the prior valuation, which finished in Fiscal Year 2034. The maximum funding schedule length allowed by Section 22F of Chapter 32 of the Massachusetts General Laws is eighteen years to Fiscal 2040.
- Arlington's funding schedule was developed by setting the contribution to increase by 5.50% annually, except for the final year, when it decreases by 12.01%.

The schedule is shown on the following page.

ARLINGTON CONTRIBUTORY RETIREMENT SYSTEM
FUNDING SCHEDULE

Fiscal Year	Normal Cost	Unfunded Liability*	Funding Amortization of UAAL	Net 3(8)(c) Payments	Schedule Contribution**	% Change
2023	3,035,221	134,612,827	12,485,966	(89,645)	15,431,542	5.50%
2024	3,171,806	129,071,859	13,198,116	(89,645)	16,280,277	5.50%
2025	3,314,537	118,850,594	13,950,800	(89,645)	17,175,692	5.50%
2026	3,463,691	110,347,745	14,746,309	(89,645)	18,120,355	5.50%
2027	3,619,557	102,293,537	15,587,062	(89,645)	19,116,975	5.50%
2028	3,782,438	92,775,928	16,475,616	(89,645)	20,168,408	5.50%
2029	3,952,647	81,641,334	17,414,669	(89,645)	21,277,671	5.50%
2030	4,130,516	68,722,532	18,407,071	(89,645)	22,447,943	5.50%
2031	4,316,390	53,837,543	19,455,835	(89,645)	23,682,580	5.50%
2032	4,510,627	36,788,427	20,564,139	(89,645)	24,985,121	5.50%
2033	4,713,605	17,359,988	17,359,988	(89,645)	21,983,949	-12.01%
2034	4,925,718	-	-	(89,645)	4,836,073	-78.00%

Amortization of Unfunded Liability as of July 1, 2022

* Includes recognition of the following asset gains/(losses) in Fiscal 2024 through 2026:

2024	1,603,883
2025	5,134,310
2026	1,895,035

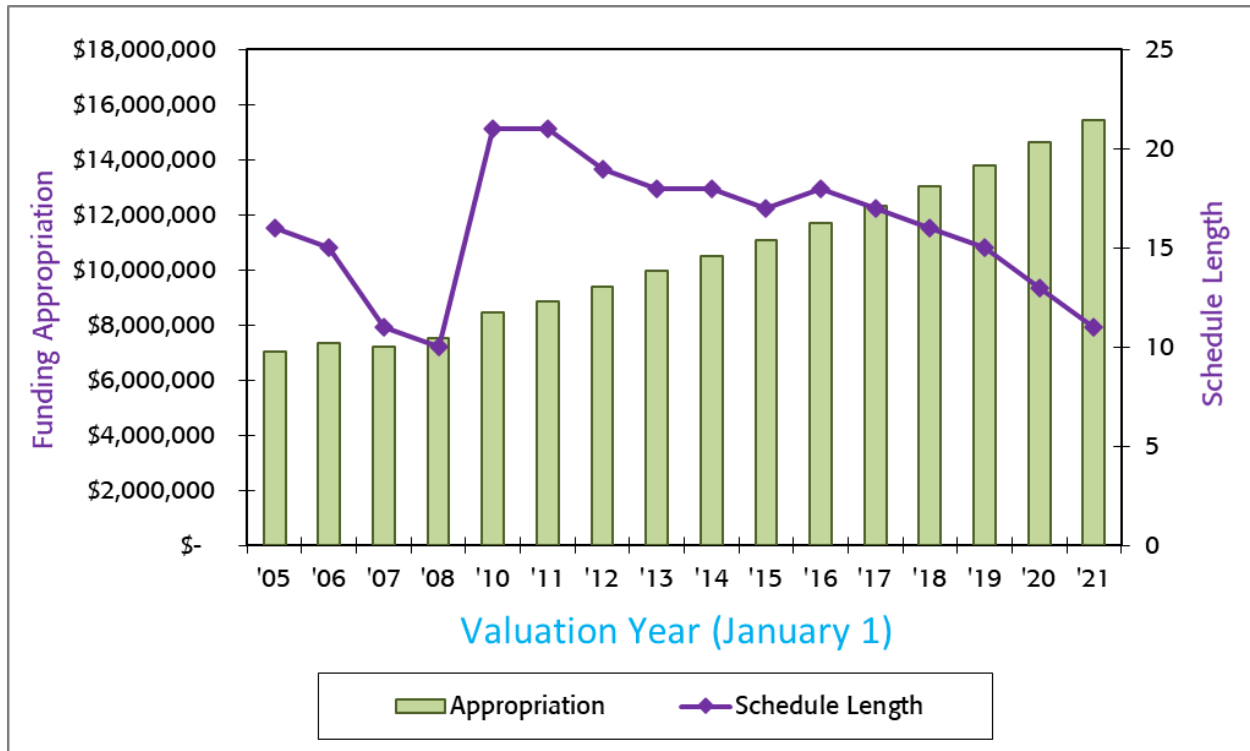
** Contributions are set to be the amount resulting from a 5.5% increase on the prior year's contribution.
The contribution in FY2033 decreases by -12.01%.

Bases in the funding schedule:

- Amortization of the unfunded actuarial accrued liability: 11 years.

History of Funding Effort

Below is a history of the length of funding schedule used by the Arlington Retirement System, and the amount of the initial contribution for each funding schedule.

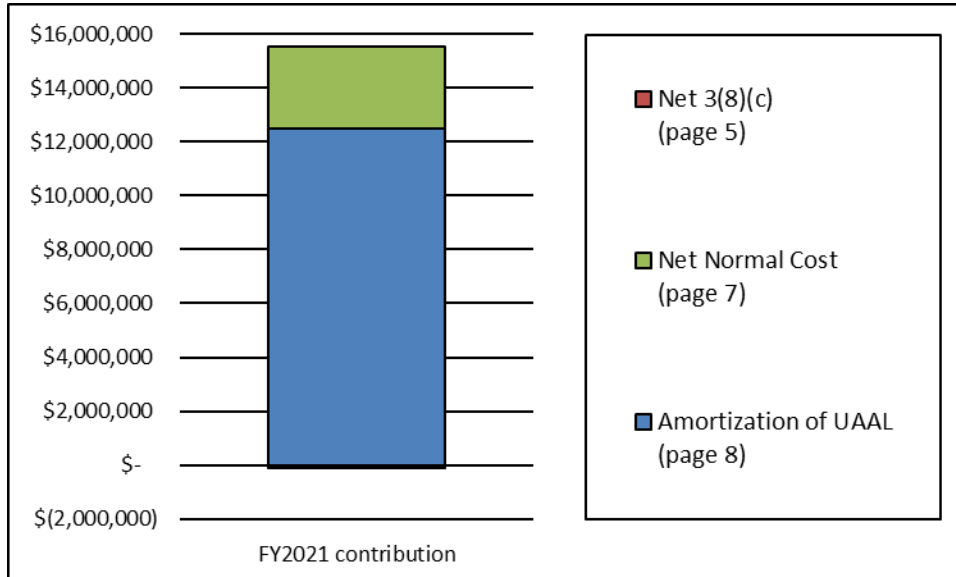


The funding objective of the plan is to fully fund the system while attempting to maintain a stable contribution amount for the upcoming fiscal year that is consistent with prior funding schedules or if employer finances allow it, to increase the contribution amount. This funding objective is being met.

The following pages discuss the components that make up the contribution, and how they are calculated from the actuarial results.

Components of Funding Appropriation

Components of the funding contribution are compared below, and discussed on the following pages.



Net 3(8)(c) Payments

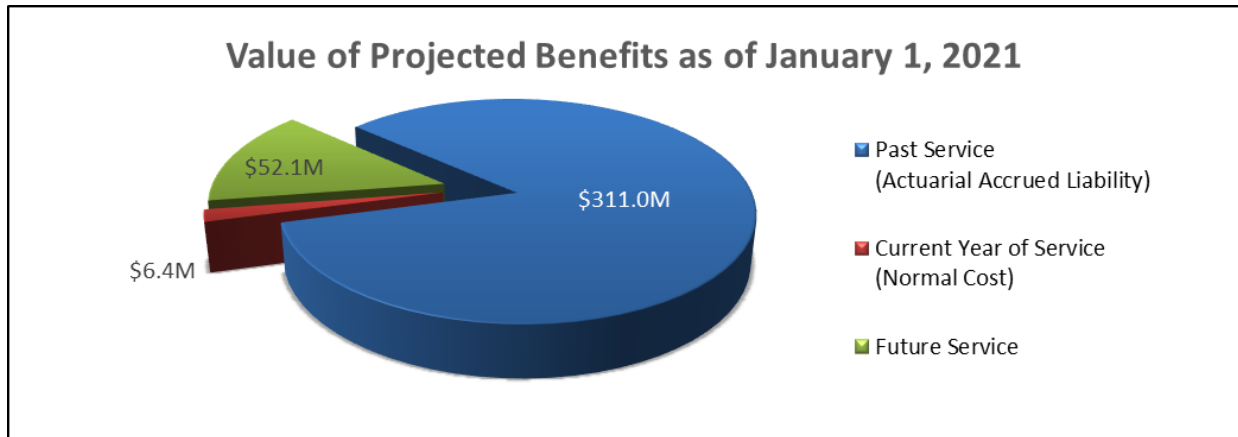
- 3(8)(c) payments are benefits which the Arlington Retirement System pays to or receives from other retirement boards for service that a retiree had with a different retirement system.
- The net amount is equal to what Arlington pays out, less what Arlington receives from other systems, based on the most recent PERAC annual statement:

3(8)(c) payments made to other systems	\$ 467,685
3(8)(c) payments received from other systems	<u>(557,330)</u>
Net payments in funding schedule	\$ (89,645)

- For the funding schedule, the amount of net payments is assumed to remain level in future years.

Development of Actuarial Results

Actuarial liabilities are calculated based on benefits that members are projected to receive in the future. The value of projected benefits is divided between past service, future service, and the current year of service.



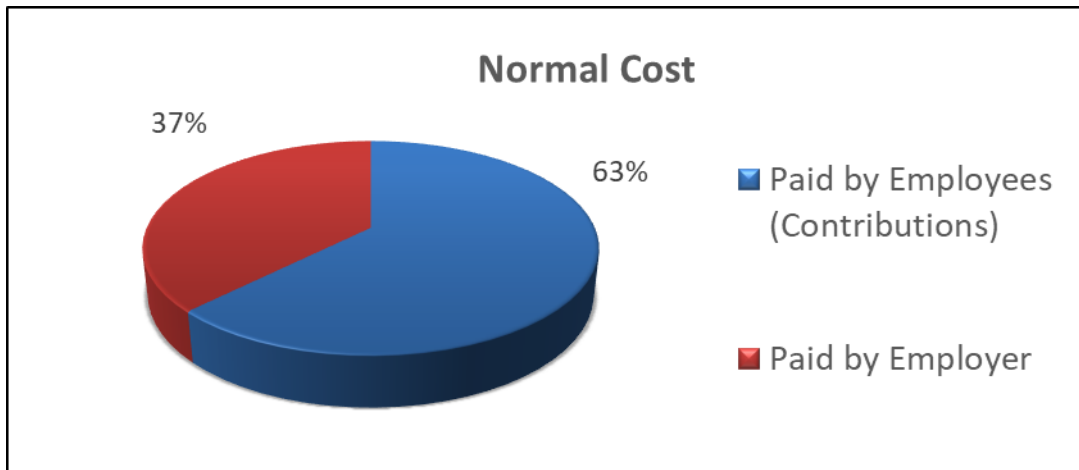
The actuarial funding method (in this case, entry age normal), assigns values to each of these periods of service.

- **Past service:** The Actuarial Accrued Liability (AAL), is the portion of the benefit value that is associated with past service; this can be thought of as the “price” of benefits already earned by members of the system.
- **Current year:** The “price” of benefits being earned during the current year is referred to as the Normal Cost (NC). This includes only the actives, as neither inactives nor retirees are earning any additional service.
- **Future service:** The amount for future service is not included in the liability, as those years of service have not yet been earned.

For retirees, the “past service” amount accounts for the entire value of their benefits; they have completed their careers, and will earn no more service during the current year or any future years.

Net Normal Cost

The entire Normal Cost is not borne by the System; a significant portion is paid by employee contributions. The portion of the Normal Cost not covered by employee contributions is the amount that must be paid through funding appropriations; this is the Net Normal Cost.



The Net Normal Cost as seen in the funding schedule is calculated by adjusting for timing, and adding in the administrative expense. The calculation is shown below, and compared to the covered payroll:

	January 1, 2021	% of Payroll*
Gross Normal Cost (GNC)	\$ 6,423,439	14.9%
Employees Contribution	<u>4,018,612</u>	9.3%
Net Normal Cost (NNC)	\$ 2,404,828	5.6%
Adjustment to beginning of Fiscal Year 2023**	164,139	
Administrative Expense	<u>466,254</u>	1.1%
Adjusted Net Normal Cost With Admin. Expense	\$ 3,035,221	

* Payroll paid in 2020 for employees as of January 1, 2021 is \$43,224,316. Payroll for new hires in 2020 was annualized.

** The NNC is adjusted from January 1, 2021 to Fiscal 2023 by rolling it forward with a salary increase factor of 4.50%.

Unfunded Liability

The Unfunded Actuarial Accrued Liability (UAAL) is the portion of the AAL that is not covered by the value of the plan assets.

This is adjusted from the date of the valuation to the date of the contribution (July 1, 2022) to produce the Unfunded Liability seen in Fiscal Year 2023 in the funding schedule.

The liability results were as follows:

	January 1, 2021
Actuarial Accrued Liability	
a. Active Members	\$ 118,091,049
b. Inactive Members	3,584,608
c. Retired Members and Beneficiaries	<u>192,892,561</u>
d. Total	\$ 314,568,218
Unfunded Actuarial Accrued Liability	
a. Actuarial Accrued Liability	\$ 314,568,218
b. Less Actuarial Value of Assets	<u>182,822,717</u>
c. Unfunded Actuarial Accrued Liability	\$ 131,745,500
d. Adjustment to FY2023	<u>2,867,327</u>
e. Unfunded Actuarial Accrued Liability as of FY2023	\$ 134,612,827

The UAAL and funding ratio are measures of the plan's funded status, which reflect the plan's position as of January 1, 2021. We believe these measures, by themselves, are not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations. However, we believe these measures, in conjunction with the plan's funding schedule and unrecognized gains/losses, are appropriate for assessing the amount of future contributions.

Active Liability by Decrement

An active member can incur liabilities for the Retirement System in one of four ways:

- They can retire (if eligible),
- They can become disabled and collect a disability benefit,
- They can die, or
- They can terminate service and withdraw their ASF balance or receive a deferred retirement benefit

Active members have a portion of their liability associated with each of these four outcomes. The Accrued Liability for active members is divided as follows:

Active Actuarial Accrued Liability	
Superannuation Retirement	\$ 108,961,532
Death	2,322,325
Disability	5,451,565
Withdrawal	<u>1,355,627</u>
TOTAL	\$ 118,091,049

Demographic Results

Actives	
a. Number	771
b. Annual Compensation	\$43,224,316
c. Average Annual Compensation	\$56,063
d. Average Attained Age	46.8
e. Average Past Service	10.1
Retired, Disabled and Beneficiaries	
a. Number	602
b. Total Benefits (excluding State COLA)	\$19,539,884
c. Average Benefits	\$32,458
d. Average Age	74.9
Inactives	
a. Number	464

- Total compensation changed by 3.4% over the prior valuation
 - Average annual compensation changed by 8.9%
 - Salary loss of \$298 thousand compared to projected experience

History of Demographic Statistics

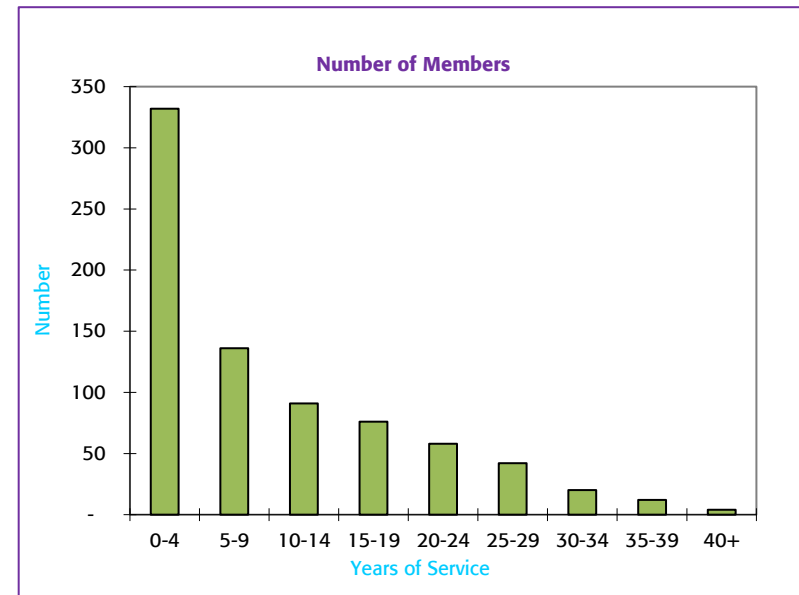
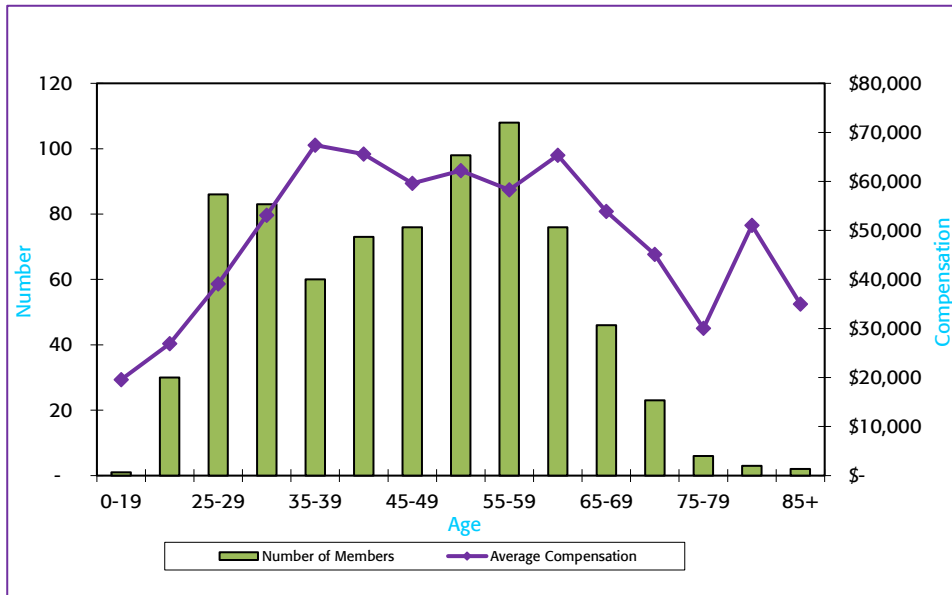
Valuation Year	Actives	Average Age	Average Past Service	Average Ann'l Pay
2021	771	46.8	10.1	\$56,063
2020	812	45.8	9.6	\$51,504
2019	773	46.5	10.0	\$51,865
2018	735	47.0	10.5	\$51,978
2017	720	46.8	10.6	\$51,089
2016	696	47.0	11.0	\$49,893
2015	705	47.4	11.1	\$47,566
2014	693	47.0	10.7	\$45,893
2013	676	47.6	11.0	\$44,394
2012	677	47.7	11.0	\$42,261
2011	661	48.3	11.6	\$43,323
2010	677	48.1	11.3	\$42,694
2008	707	48.6	11.3	\$39,257
2006	681	48.3	11.7	\$38,676
2005	664	48.4	11.6	\$38,115
2004	683	48.1	11.5	\$35,116
2003	683	48.2	11.3	\$34,490
2002	733	48.5	11.5	\$33,119

- Average annual compensation has grown by 69.3% (2.8% annually) over the past nineteen years. Average past service increased, reversing a recent trend. We believe this is due to the pandemic and the resulting shutdown of some facilities.

Distribution of Plan Members as of January 1, 2021

ACTIVE MEMBERS

AGE	0-4 Years	5-9 Years	10-14 Years	15-19 Years	20-24 Years	25-29 Years	30-34 Years	35-39 Years	40 + Years	Total	Total Compensation	Average Compensation
0-19	1	-	-	-	-	-	-	-	-	1	\$ 19,577	\$ 19,577
20-24	30	-	-	-	-	-	-	-	-	30	\$ 807,226	\$ 26,908
25-29	78	8	-	-	-	-	-	-	-	86	\$ 3,361,106	\$ 39,083
30-34	49	31	3	-	-	-	-	-	-	83	\$ 4,405,874	\$ 53,083
35-39	28	13	15	4	-	-	-	-	-	60	\$ 4,043,481	\$ 67,391
40-44	27	17	12	15	2	-	-	-	-	73	\$ 4,786,393	\$ 65,567
45-49	28	17	7	12	11	1	-	-	-	76	\$ 4,531,408	\$ 59,624
50-54	31	17	13	8	11	13	5	-	-	98	\$ 6,093,681	\$ 62,180
55-59	32	16	21	11	11	11	3	3	-	108	\$ 6,293,253	\$ 58,271
60-64	14	8	9	14	9	11	7	4	-	76	\$ 4,963,918	\$ 65,315
65-69	8	8	5	9	7	4	3	-	2	46	\$ 2,477,677	\$ 53,863
70-74	5	1	6	2	5	1	1	2	-	23	\$ 1,037,298	\$ 45,100
75-79	1	-	-	1	2	1	1	-	-	6	\$ 180,315	\$ 30,053
80-84	-	-	-	-	-	-	-	1	2	3	\$ 153,170	\$ 51,057
85+	-	-	-	-	-	-	-	2	-	2	\$ 69,940	\$ 34,970
TOTAL	332	136	91	76	58	42	20	12	4	771	\$ 43,224,316	\$ 56,063



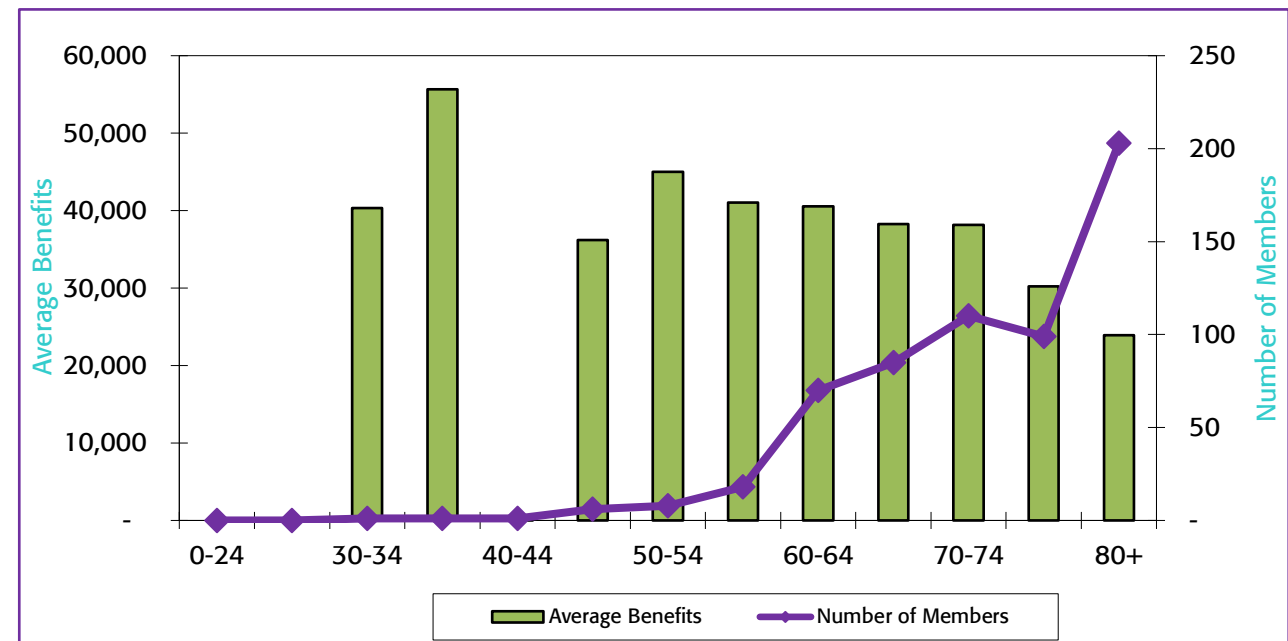
Distribution of Plan Members as of January 1, 2021

RETIRED MEMBERS

Retired Members and Beneficiaries			
Age	Number	Average Benefit	Total Benefit
0-24	-	-	-
25-29	-	-	-
30-34	1	40,307	40,307
35-39	-	-	-
40-44	1	140	140
45-49	1	2,249	2,249
50-54	1	21,344	21,344
55-59	14	39,877	558,282
60-64	54	37,825	2,042,562
65-69	70	37,652	2,635,632
70-74	95	36,999	3,514,882
75-79	86	28,958	2,490,400
80+	188	22,774	4,281,474
TOTAL	511	\$ 30,503	\$ 15,587,274

Disabled Members			
Age	Number	Average Benefit	Total Benefit
0-24	-	-	-
25-29	-	-	-
30-34	-	-	-
35-39	1	55,663	55,663
40-44	-	-	-
45-49	5	42,966	214,829
50-54	7	48,399	338,790
55-59	4	45,096	180,385
60-64	16	49,639	794,225
65-69	15	41,278	619,170
70-74	15	45,347	680,202
75-79	13	38,625	502,126
80+	15	37,815	567,220
TOTAL	91	\$ 43,435	\$ 3,952,610

Total			
Age	Number	Average Benefit	Total Benefit
0-24	-	-	-
25-29	-	-	-
30-34	1	40,307	40,307
35-39	1	55,663	55,663
40-44	1	140	140
45-49	6	36,180	217,078
50-54	8	45,017	360,134
55-59	18	41,037	738,667
60-64	70	40,526	2,836,787
65-69	85	38,292	3,254,802
70-74	110	38,137	4,195,084
75-79	99	30,228	2,992,527
80+	203	23,885	4,848,694
TOTAL	602	\$ 32,458	\$ 19,539,884



Benefits shown are net of State reimbursed COLA.

Assets

	Cash	\$	5,577,417.38
	Pooled Alternative Investments		732,220.00
	PRIT FUND		<u>184,980,257.36</u>
A	Sub-Total:	\$	191,289,894.74
	Interest Due and Accrued	\$	0.21
	Accounts Receivable		168,774.01
	Accounts Payable		<u>(2,724.03)</u>
B	Sub-Total:	\$	166,050.19
	Market Value of Assets [(A) + (B)]	\$	191,455,944.93

- The asset allocation is approximately 20% fixed income, cash, receivables and payables and 80% equities, alternative investments, hedge funds and similar types of investments.
- Annual return in calendar 2020: 11.4% vs. a 7.00% assumption.
 - \$7,580,139 net actuarial asset gain in Calendar Year 2020

Actuarial Value of Assets

For its Actuarial Value of Assets (AVA), Arlington uses a four-year asset smoothing method which recognizes gains and losses over a four-year period. For example, for a gain in 2018, 25% would be recognized in 2019, another 25% in 2020, another 25% in 2021, and the final 25% in 2022.

The AVA is \$182.8 million, \$8.6 million lower than the MVA. The calculation of the smoothed asset value is shown on the following page.

Four-Year Asset Smoothing

1. Market value of assets including receivable/payable as of 01/01/2021 \$ 191,455,945

2. Phase-in of asset gains and losses

	Plan Year (1)	Original Amount (2)	Percent Unrecognized (3)	Amount Unrecognized (2) x (3)
a.	2020	\$7,580,139	75%	\$5,685,104
b.	2019	\$12,957,103	50%	\$6,478,551
c.	2018	(\$14,121,710)	25%	(\$3,530,427)
d.	2017	\$11,758,169	0%	\$0
e.	Total	\$18,173,701		\$8,633,228

3. Valuation assets without corridor as of 01/01/2021 \$ 182,822,717
(1. - 2.e.)

4. Corridor Check

a. 90% of Market Value \$ 172,310,350
b. 110% of Market Value \$ 210,601,539

5. Valuation assets with corridor as of 01/01/2021 \$ 182,822,717
(3. within Corridor)

6. Calculation of return on valuation assets

a. Valuation assets as of 01/01/2020 \$ 168,136,827

b. ER contribs + EE contribs - Ben Pymts - Expenses \$ (1,950,598)

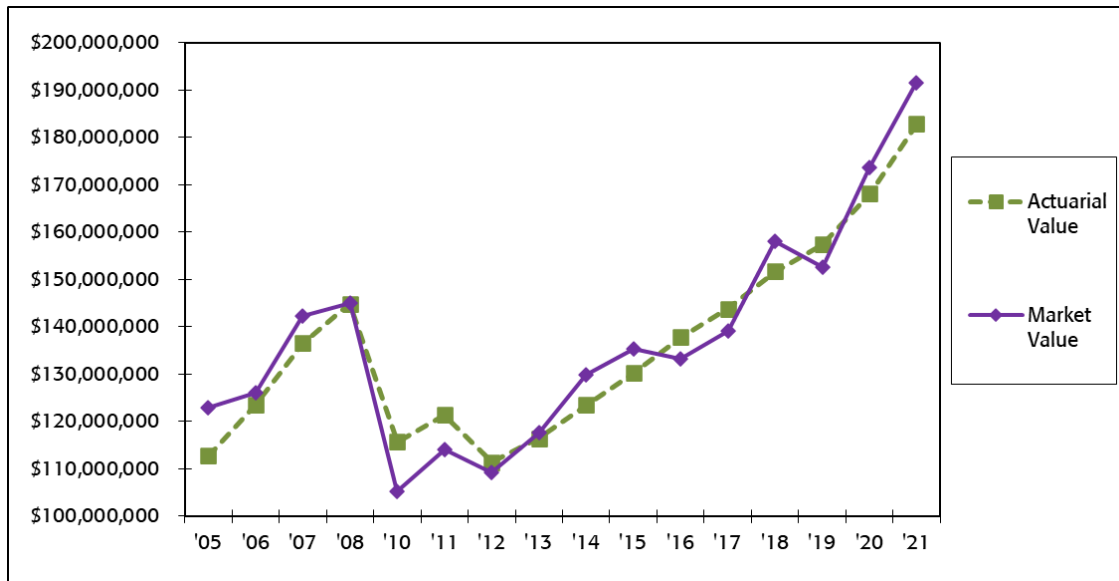
c. Actual return on valuation assets \$ 16,636,488
5. - (6.a. + 6.b.)

d. Weighted value of valuation assets \$ 167,161,528

e. Return on valuation assets 9.95%
(6.c. / 6.d.)

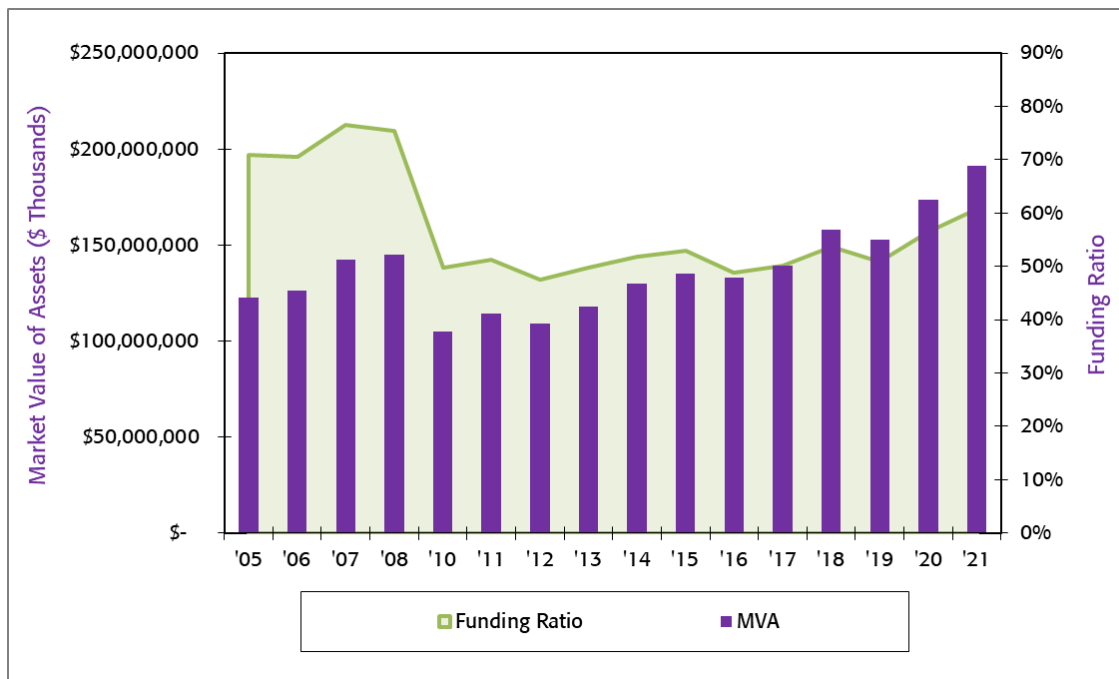
f. Annualized return on assets 9.95%

The benefit of using an asset smoothing method is that it results in a more stable measure of the financial condition of the Plan. This is illustrated by the chart below, which displays a history of the Actuarial Value and Market Value of Assets over the past sixteen valuations.



Funding Ratio

The following displays the history of the funding ratio for the past sixteen valuations, based on Market Value of Assets. The Market Value for each year is shown to accompany the funding ratio. We show the market value of assets as that is the amount of assets actually available to pay for benefits.



Risk

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as:

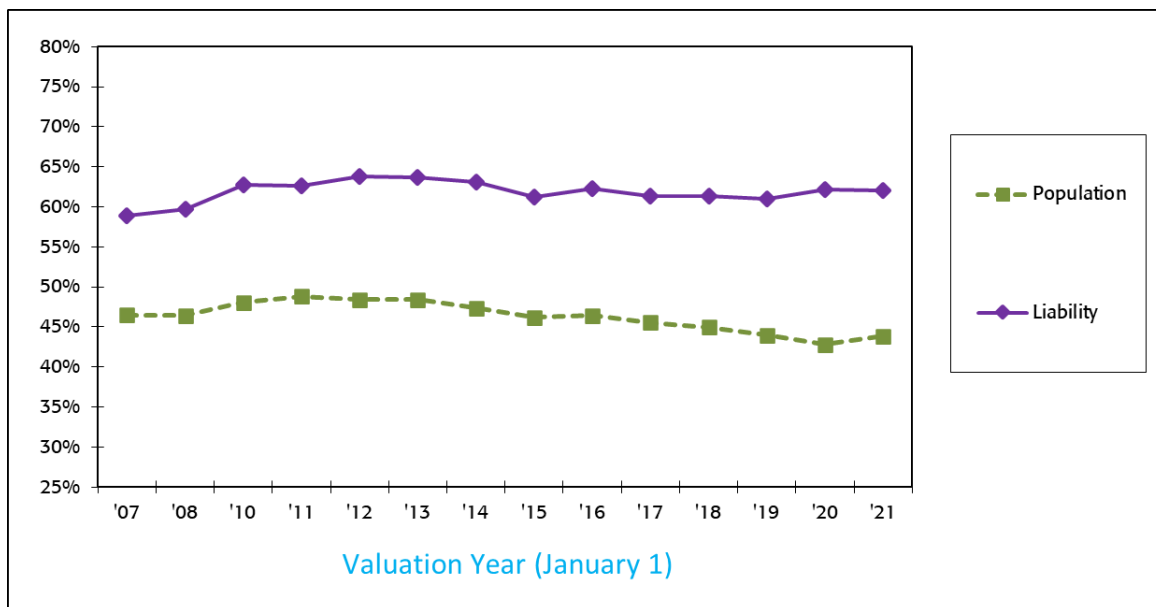
- Plan experience differing from that anticipated by the economic or demographic assumptions,
- Changes in economic or demographic assumptions,
- Increases or decreases expected as part of natural operation of the methodology used for these measurements such as additional contribution requirements based on the plan's funded status,
- Changes in plan provisions or applicable law.

As part of the valuation, we have not performed an analysis of the potential range of future measurements. GASB Statement 67 and 68 reports for the Arlington Retirement System contain alternate results to measure the impact of increases or decreases in the discount rate.

Maturity

One important concern is the maturity of the system. Systems with a greater portion of their liability stemming from current retirees whose benefits already being paid are likely to experience greater impact from short-term asset experience, as high payouts in the near future leave less of the current assets will be available to benefit from investment returns further in the future.

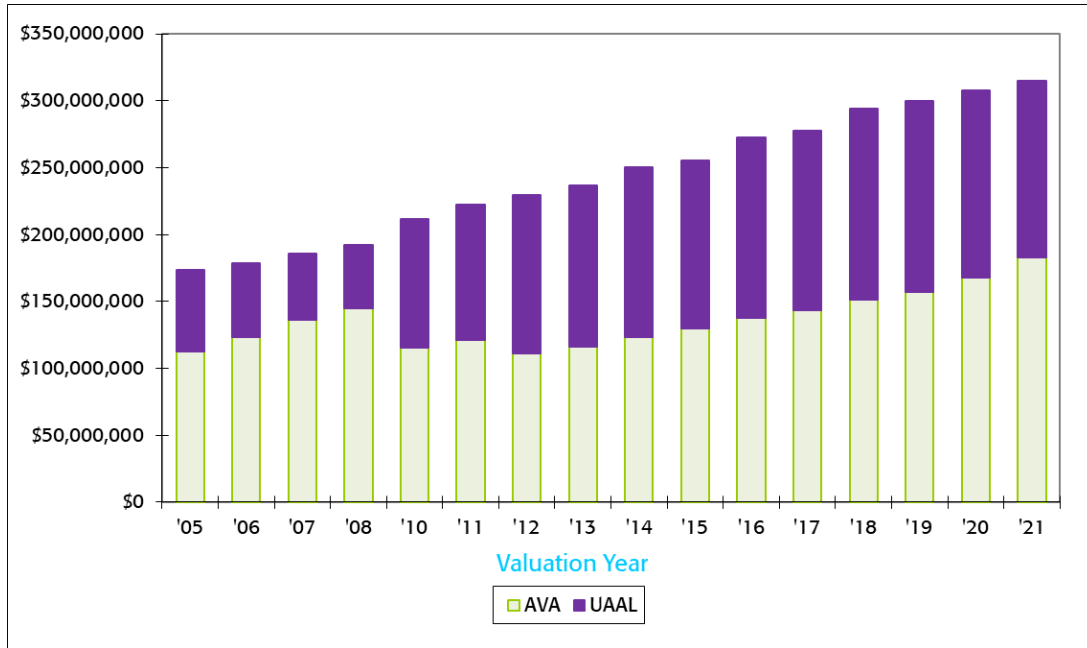
Below is a history of the retiree's percentage of the covered population and liability. While the retiree share of the population has decreased since 2011, the liability has hovered around 60% over the past fourteen valuations.



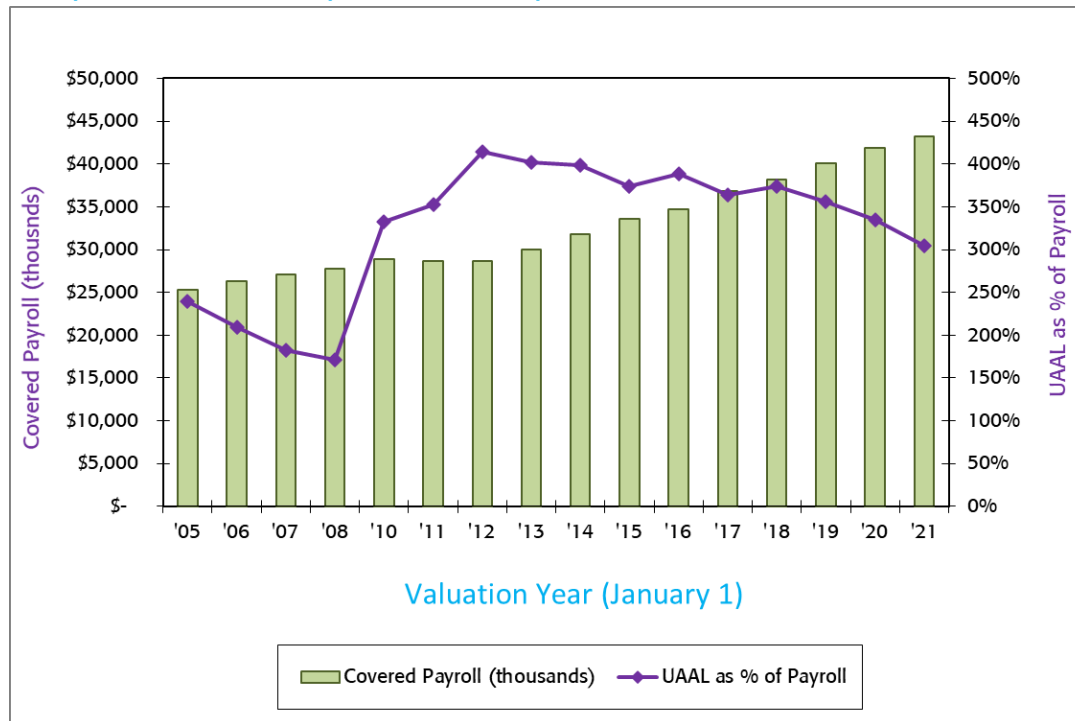
Historical Experience

The following charts display Arlington's history of Actuarial Assets and Unfunded Liability; the second chart compares the unfunded liability to covered payroll.

History of Assets and Unfunded Liability



History of Unfunded Liability and Covered Payroll



Comparative Results

	January 1, 2021	January 1, 2020	Percentage Change
Funding			
Contribution for Fiscal 2023	\$15,431,542	\$15,504,677	-0.5%
Members			
■ Actives			
a. Number	771	812	-5.0%
b. Annual Compensation	\$43,224,316	\$41,821,021	3.4%
c. Average Annual Compensation	\$56,063	\$51,504	8.9%
d. Average Attained Age	46.8	45.8	2.3%
e. Average Past Service	10.1	9.6	5.6%
■ Retired, Disabled and Beneficiaries			
a. Number	602	608	-1.0%
b. Total Benefits*	\$19,539,884	\$19,287,118	1.3%
c. Average Benefits*	\$32,458	\$31,722	2.3%
d. Average Age	74.9	75.0	-0.1%
■ Inactives			
a. Number	464	372	24.7%
Normal Cost			
a. Total Normal Cost as of January 1, 2021	\$6,423,439	\$6,331,882	1.4%
b. Less Expected Members' Contributions	<u>4,018,612</u>	<u>3,860,777</u>	4.1%
c. Normal Cost to be funded by the Municipality	\$2,404,828	\$2,471,106	-2.7%
d. Adjustment to July 1, 2022	164,139	168,662	-2.7%
e. Administrative Expense Assumption	<u>466,254</u>	<u>452,702</u>	3.0%
f. Normal Cost Adjusted to July 1, 2022	\$3,035,221	\$3,092,471	-1.9%
Actuarial Accrued Liability			
a. Active Members	\$118,091,049	\$115,435,722	2.3%
b. Inactive Members	3,584,608	2,575,585	39.2%
c. Retired Members and Beneficiaries	<u>192,892,561</u>	<u>189,966,675</u>	1.5%
d. Total	\$314,568,218	\$307,977,981	2.1%
Unfunded Actuarial Accrued Liability			
a. Actuarial Accrued Liability	\$314,568,218	\$307,977,981	2.1%
b. Less Actuarial Value of Assets	<u>182,822,717</u>	<u>168,136,827</u>	8.7%
c. Unfunded Actuarial Accrued Liability	\$131,745,500	\$139,841,154	-5.8%
d. Adjustment to FY2023	<u>2,867,327</u>	<u>4,712,297</u>	
e. Unfunded Actuarial Accrued Liability as of FY2023	\$134,612,827	\$144,553,451	

* Excluding State reimbursed COLA

APPENDICES

Appendix A – Actuarial Methods and Assumptions

All assumptions and methodologies were either set by statute or selected by the Arlington Retirement Board in conjunction with guidance provided by Stone Consulting, Inc.

Stone Consulting, Inc. was furnished member and financial data by the Arlington Retirement System's administrative staff. Although examined under broad parameters for reasonableness, the data was not audited by the actuary. With the assistance of the staff of the Arlington Retirement Board, we were able to develop a database sufficient for valuation purposes.

ASSUMPTION AND METHODOLOGY CHANGES SINCE PRIOR VALUATION

- Mortality assumption: RP-2014 adjusted to 2006, projected generationally using MP-2020
 - The prior valuation used the same table, projected with MP-2019
 - This decreased the liability by \$1.5 million
- Salary increase assumption: shown in full on following page
 - This decreased the liability by \$398 thousand
- All other assumptions and methods were maintained from the prior valuation

ACTUARIAL METHODS

Actuarial Cost Method

The Entry Age Normal Actuarial Cost Method has been used in this valuation. Under this method, the normal cost is the amount calculated as the level percentage of compensation necessary to fully fund the prospective benefits from each member's entry age to retirement age.

The actuarial accrued liability represents the theoretical accumulation of all prior years' normal costs for the plan members as if the program had always been in effect. The unfunded actuarial accrued liability is the excess of the actuarial accrued liability over plan assets. The use of the Entry Age Normal actuarial funding method is consistent with the requirements of Chapter 32 of the Massachusetts General Laws.

Asset Valuation Method

Market Value of Assets, adjusted for payables and receivables, adjusted to phase in investment gains compared to the expected market value and losses evenly over four years (shown on page 14). The asset valuation method adjusts the results to no less than 90% and no more than 110% of the market value of assets adjusted for payables and receivables.

Fiscal Year Adjustment

The actuarial results are adjusted by the valuation interest rate and salary scale to the beginning of Fiscal Year 2023. The unfunded actuarial accrued liability is rolled forward with normal cost and further adjusted by anticipated contributions and interest.

Actuarial Methods and Assumptions (Continued)

ACTUARIAL ASSUMPTIONS

Valuation Date

January 1, 2021.

Investment Return

7.00% per year net of investment expenses. The investment return assumption is a long-term assumption and is based on capital market expectations by asset class, historical returns, and professional judgement.

Cost-of-Living Increases

A 3% COLA on the first \$15,000 of a member's retirement allowance is assumed to be granted annually.

Salary Increases

Select and Ultimate: salary increases based on group and year of service.

- Group 1 and 2: 7.75% increases for the first 6 years of service; 4% thereafter
- Police: 4% increases for all years except:
 - 9% in years 2 and 3
 - 5% in years 7 and 10
- Fire: 4% increases for all years except:
 - 7.5% in year 1
 - 12.5% in year 2
 - 5% in years 4 through 6

The prior year assumption was the same for members of group 1 and 2. Group 4 employees (police and fire) were assumed to receive 4% increases for all years except:

- 5% in year 5
- 4.99% in year 10
- 4.98% in year 15
- 4.971% in year 20
- 4.962% in year 25

Step increases are assumed to be part of the salary increase assumption. The total payroll is assumed to increase at 4.50% per year.

The salary increase assumption reflects prior experience including PERAC's 2002 local experience study, current expectations, and professional judgement.

Actuarial Methods and Assumptions (Continued)

Family Composition

Members assumed married with 2 dependent children – one male and one female both age 15; age difference between member and spouse assumed to be 3 years (the male being the older).

Administrative Expenses

Estimated budgeted amount of \$466,254 for the Fiscal Year 2023 is added to the Normal Cost. The administrative expense does not include investment manager and custodial fees. These fees are considered part of the discount rate assumption that is net of fees.

Regular Interest Rate Credited to Annuity Savings Account

2% per year.

Net 3(8)(c)

Net 3(8)(c) payments are assumed to be the same level as the past calendar year for all future years.

Contribution Timing

Contributions are assumed to be made at the beginning of the fiscal year.

Salary Adjustment

Active members who were employed prior to the dates listed below will be provided a lump-sum payment of a certain percentage of the final 3-year average regular compensation upon termination. This was to recognize that annual increases were not consistently provided during their term of employment. The Retirement Board deems the lump-sum payment regular compensation. For valuation purposes the following percentage increases were used:

Employed	Group 4
Prior to July 1, 1984	7.1%
July 1, 1984 – December 31, 1992	2.0%

Section 90 A, C, D Increases

Additional liability of \$1,143,907 and additional normal cost of \$23,820 were calculated by assuming that Section 90 increases in future years will remain a constant ratio of annual benefits paid. This ratio was applied to the projected benefits for each year, and then multiplied by a longevity factor of 6.728469. This was calculated as the average present value of a dollar of annual benefit for those receiving Section 90 increases, weighted according to the amount of each member's Section 90 increase.

Credited Service

All service is assumed to be due to employment with the municipality.

In-Service Disability and Death

Both Disability and In-Service Death are assumed to be 55% ordinary and 45% accidental for Group 1 and 2, and 10% ordinary and 90% accidental for Group 4.

Withdrawal Prior to Retirement

The rates shown at the following sample ages illustrate the withdrawal assumption. Withdrawal rates are set to zero if the retirement rate at that age is nonzero.

Rate of Withdrawal

Service	Group 1 and 2	Group 4
0	15%	1.5%
1	12%	1.5%
2	10%	1.5%
3	9%	1.5%
4	8%	1.5%
5	7.6%	1.5%
10	5.4%	1.5%
15	3.3%	0.0%
20	2.0%	0.0%
25	1.0%	0.0%
30+	0.0%	0.0%

Disability Prior to Retirement

The rates shown at the following sample ages illustrate the assumption regarding the incidence of disability:

Rate of Disability

Age	Group 1 and 2	Group 4
20	0.01%	0.10%
25	0.02%	0.20%
30	0.03%	0.30%
35	0.06%	0.30%
40	0.10%	0.30%
45	0.15%	1.00%
50	0.19%	1.25%
55	0.24%	1.20%
60	0.28%	0.85%

Actuarial Methods and Assumptions (Continued)

Rates of Retirement

The rates shown at the following ages illustrate the assumption regarding the incidence of retirement, once the member has achieved 10 years of service:

Age	Group 1 & 2 Male	Group 1 & 2 Female	Group 4	Hired after 4/1/2012		
				Group 1 & 2 Male	Group 1 & 2 Female	Group 4
50	1%	1.5%	2%	0%	0%	0%
51	1%	1.5%	2%	0%	0%	0%
52	1%	2.0%	2%	0%	0%	0%
53	1%	2.5%	2%	0%	0%	0%
54	2%	2.5%	7.5%	0%	0%	0%
55	2%	5.5%	15%	0%	0%	10%
56	2.5%	6.5%	10%	0%	0%	7%
57	2.5%	6.5%	10%	0%	0%	20%
58	5%	6.5%	10%	0%	0%	10%
59	6.5%	6.5%	15%	0%	0%	15%
60	12%	5%	20%	25%	30%	20%
61	20%	13%	20%	20%	13%	20%
62	30%	15%	25%	30%	15%	25%
63	25%	12.5%	25%	25%	12.5%	25%
64	22%	18%	30%	22%	18%	30%
65	40%	15%	100%	40%	15%	100%
66	25%	20%	N/A	25%	20%	N/A
67	25%	20%	N/A	25%	20%	N/A
68	30%	25%	N/A	30%	25%	N/A
69	30%	20%	N/A	30%	20%	N/A
70	100%	100%	N/A	100%	100%	N/A

Mortality

RP-2014 table adjusted to 2006 and projected generationally with MP-2020 (sex-distinct). During employment the healthy employee mortality table is used. Post-employment the healthy annuitant table is used.

Mortality for disabled retirees follows the same table as non-disabled retirees, set forward 2 years. Death is assumed to be due to the same cause as the disability 40% of the time.

Appendix B – Summary of Principal Provisions

1. PARTICIPANT

Participation is mandatory for all full-time employees whose employment commences before age 65. There are three classes of members in the retirement system:

- **Group 1:** general employees
- **Group 2:** employees in specified hazardous occupations (e.g., electricians)
- **Group 4:** police and firefighters

2. MEMBER CONTRIBUTIONS

Member contributions vary depending upon date hired as follows:

Date of Hire	Member Contribution Rate
Prior to 1975	5% of Pay
1975 – 1983	7% of Pay
1984 – June 30, 1996	8% of Pay
After June 30, 1996	9% of Pay

Members hired after 1978 contribute an additional 2% of pay over \$30,000.

3. PAY

a. Pay

Gross regular compensation excluding bonuses, overtime, severance pay, unused sick pay, and other similar compensation.

b. Average Pay

The average of pay during the three consecutive years that produce the highest average or, if greater, during the last three years (whether or not consecutive) preceding retirement. For members hired after April 1, 2012, five-year averages will be used.

4. CREDITED SERVICE

Period during which an employee contributes to the retirement system plus certain periods of military service and “purchased” service.

Summary of Principal Provisions (Continued)

5. SERVICE RETIREMENT

a. Eligibility

Hired prior to April 2, 2012:

- Attainment of age 55 and completion of ten years of credited service,
- or at any age with completion of 20 years of service.
- If hired prior to 1978 or a member of Group 4, the completion of ten years of service is not required.

Hired after April 1, 2012:

- Group 1 – Age 60 and Completion of 10 years of credited service;
- Group 2 – Age 55 and completion of 10 years of service;
- Group 4 – Age 55.

b. Retirement Allowance

Determined as the product of the member's benefit percentage, average pay and credited service, where the benefit percentage is shown below (maximum allowance of 80% of average pay):

Benefit Percentage	Group 1	Group 2	Group 4
2.5%	65+	60+	55+
2.4	64	59	54
2.3	63	58	53
2.2	62	57	52
2.1	61	56	51
2.0	60	55	50
1.9	59	N/A	49
1.8	58	N/A	48
1.7	57	N/A	47
1.6	56	N/A	46
1.5	55	N/A	45
Hired after April 1, 2012*			
2.5%	67+	62+	57+
2.35	66	61	56
2.20	65	60	55
2.05	64	59	54
1.90	63	58	53
1.75	62	57	52
1.60	61	56	51
1.45	60	55	50

*Reduction is .125% for each year early instead of .15% per year for employees with over 30 years of service.

In addition, veterans receive an additional \$15 per year for each year of credited service up to 20 years

Summary of Principal Provisions (Continued)

6. DEFERRED VESTED RETIREMENT

a. Eligibility

Completion of 10 years of credited service (for elected and appointed members, 6 years in the event of involuntary termination).

b. Retirement Allowance

Determined in the same manner as "Service Retirement" section above with the member eligible to start collecting a benefit at age 55, (or age 57 for post-April 1, 2012 hires) or defer until later at his or her discretion. If a member chooses, his or her contributions with interest may be withdrawn. The amount of interest he or she will receive depends on length of service and whether or not the termination of employment was voluntary.

7. ORDINARY DISABILITY RETIREMENT

a. Eligibility

Non-job related disability after completion of 10 years of credited service.

b. Retirement Allowance

Determined in the same manner as "Service Retirement" section and calculated as if the member had attained age 55 (or age 60 for group 1 hired after April 1, 2012), if younger. Veterans receive 50% of pay (during final year) plus an annuity based on accumulated member contributions with interest.

8. ACCIDENTAL DISABILITY RETIREMENT

a. Eligibility

Disabled as a result of an accident in the performance of duties. No age or service requirement.

b. Retirement Allowance

72% of pay plus an annuity based on accumulated member contributions with interest. Also, a dependent's allowance per year for each child. Total allowance not to exceed 100% of pay (75% for members hired after 1987).

Summary of Principal Provisions (Continued)

9. NON-OCCUPATIONAL DEATH

a. Eligibility

Dies while in active service, but not due to occupational injury. 2 years of service.

b. Retirement Allowance

Benefit as if Option C had been elected (see below) and member had attained age 55 (or age 57 for those hired after April 1, 2012) if younger.

Minimum monthly benefits provided as follows:

- spouse - \$500,
- first child - \$120,
- each additional child - \$90

10. OCCUPATIONAL DEATH

a. Eligibility

Dies as a result of an occupational injury.

b. Benefit Amount

72% of pay plus refund of annuity savings fund balance. In the case of an accidental disability retiree who dies of the same cause, the beneficiary receives 72% of the last 12 months salary or the current pension amount, whichever is greater.

11. COST-OF-LIVING INCREASES

An increase of up to 3% applied to the first \$15,000 of annual benefit. Funded by the Employer from Fiscal Year 1999. Percentage increase is voted on each year by the Retirement Board. Cost-of-living increases granted during Fiscal Year 1982 through Fiscal 1998 are reimbursed by the Commonwealth.

12. OPTIONAL FORMS OF PAYMENT

- Option A: Allowance payable monthly for the life of the member.
- Option B: Allowance payable monthly for the life of the member with a guarantee of remaining member contributions with interest.
- Option C: Allowance payable monthly for the life of the member with 66-2/3% continuing to the member's beneficiary upon the member's death. If the beneficiary predeceases the member, the allowance amount "pops up" to the non-reduced amount.

Appendix C – Glossary of Terms

- **Actuarial Accrued Liability**
The portion of the Present Value of Benefits that is attributable to past service.
- **Actuarial Value of Assets**
The value of assets based on the asset valuation method shown in the Actuarial Methods and Assumptions section of this report.
- **Actuarial Assumptions**
Estimates are made as to the occurrence of certain events that determine the level of benefits to be paid and how long they will be provided. The more important actuarial assumptions include the investment return on assets, salary increases and the rates of turnover, disability, retirement and mortality.
- **Actuarial Cost Method**
The procedure that is used to allocate the present value of benefits between the liability that is attributable to past service (Actuarial Accrued Liability) and that attributable to future service.
- **Funding Ratio**
The percentage of the accrued liability that is covered by the Actuarial Value of Assets.
- **GASB**
Government Accounting Standards Board (issues guidance for disclosure of retirement system liabilities).
- **Normal Cost**
The portion of the Present Value of Benefits that is attributable to benefits to be earned in the coming year.
- **PERAC**
Public Employee Retirement Administration Commission, a division of the State government which has regulatory authority over the administration of the retirement system.
- **Present Value of Benefits**
Represents the dollar value today of all benefits expected to be earned by current members if all actuarial assumptions are exactly realized.
- **PRIT**
Pension Reserves Investment Trust Fund is the state controlled and administered fund for the investment of assets for members of the retirement system.
- **Unfunded Actuarial Accrued Liability**
That portion of the Actuarial Accrued Liability not covered by System Assets.

■ Arlington Retirement Board
Actuarial Valuation as of January 1, 2021

PERAC Information Disclosure

The most recent actuarial valuation of the System was prepared by Stone Consulting, Inc. as of January 1, 2021

The normal cost for employees on that date was:	\$4,018,612	9.3% of payroll
The normal cost for the employer was:	\$2,404,828	5.6% of payroll

The actuarial liability for active members was:	\$118,091,049
The actuarial liability for retired members was (includes inactives):	\$196,477,169
Total actuarial accrued liability:	\$314,568,218
System assets as of that date (\$191,455,944.93 Market Value):	\$182,822,717
Unfunded actuarial accrued liability:	\$131,745,500

The ratio of system's assets to total actuarial liability was:	58%
--	-----

As of that date the total covered employee payroll was:	\$43,224,316
---	--------------

The principal actuarial assumptions used in the valuation are as follows:

Investment Return:	7.00% per annum
Rate of Salary Increase:	Select and ultimate rate (4.00% ultimate rate)

SCHEDULE OF FUNDING PROGRESS (Dollars in \$000's)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a % of Covered Payroll ((b-a)/c)
1/1/2021	\$182,823	\$314,568	\$131,745	58%	\$43,224	305%
1/1/2020	\$168,137	\$307,978	\$139,841	55%	\$41,821	334%
1/1/2019	\$157,412	\$299,973	\$142,561	52%	\$40,092	356%
1/1/2018	\$151,650	\$294,347	\$142,697	52%	\$38,204	374%
1/1/2017	\$143,793	\$277,735	\$133,942	52%	\$36,784	364%

GASB Statements No. 67 and 68
Report for Fiscal Year 2021

Arlington Retirement System



stoneconsulting,inc

5 West Mill Street, Suite 4
Medfield, Massachusetts 02052
T: 508.359.9600 • F: 508.359.0190
Jmoreau@stoneconsult.com
Cedgar@stoneconsult.com

TABLE OF CONTENTS

	PAGE
Actuarial Certification	
Summary of Results	1
Distribution of the Member Population	1
Changes to the Net Pension Liability	2
Projection of the Net Pension Liability	3
Pension Expense for the Fiscal Year Ended June 30, 2021	5
Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions	5
Discount Sensitivity	7
Long-Term Expected Real Rate of Return	7
Development of Results	8
Increase / (Decrease) in Pension Expense Arising from the Recognition of Gains and Losses	9
Deferred Outflows and Deferred Inflows of Resources Arising from Gains and Losses	10
Schedule of Changes in Arlington Retirement System's Net Pension Liability and Related Ratios	11
Schedule of Plan Contributions	12
Money-Weighed Rate of Return	13
Exhibits and Required Supplementary Information by Employer	14

November 3, 2021

Arlington Contributory Retirement Board
27 Maple Street, Suite G-11
Arlington, MA 02476

To the Arlington Retirement Board:

For the purpose of satisfying the requirements of the Government Accounting Standards Board (GASB) Statements No. 67 and 68, Stone Consulting, Inc. has prepared a set of illustrative tables and other Required Supplementary Information (RSI) based on the January 1, 2020 actuarial valuation of the Arlington Retirement System performed by Stone Consulting, Inc.

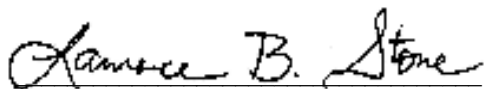
The valuation and this report were prepared using generally accepted actuarial principles and practices and meet the parameters set by the Governmental Accounting Standards Board (GASB).

To the best of our knowledge, this report is complete and accurate, and the assumptions used represent our best estimate of anticipated experience of the system. Stone Consulting, Inc. is completely independent of the Town of Arlington and the Arlington Retirement System. This includes any of its officers and key personnel. Neither we or anyone else closely associated with us has any relationship with the Town of Arlington or the Arlington Retirement System that would impair our independence, other than this or related assignments.

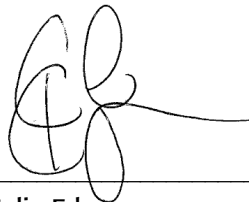
We are pleased to present these exhibits. If the Board has any questions on the content of this report, we would be glad to respond. Please note that this report is meant to be used in its entirety. Use of excerpts of this report may result in a misleading or inaccurate understanding of the results.

The undersigned are consultants for Stone Consulting, Inc. Lawrence B. Stone and Colin Edgar members of the American Academy of Actuaries, and both meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,
STONE CONSULTING, INC.
Actuaries for the Plan



Lawrence B. Stone
Member, American Academy of Actuaries



Colin Edgar
Member, American Academy of Actuaries

Summary of Results

This report has been prepared for the purpose of satisfying the requirements of GASB Statements No. 67 and 68. For GASB 67 the results are as of a valuation date of January 1, 2020 and a reporting date of December 31, 2020. For GASB 68 the results are as of a valuation date of January 1, 2020, a measurement date of December 31, 2020 and a reporting date of June 30, 2021.

The methods, assumptions, and plan provisions used to prepare these exhibits are consistent with those used in the funding valuation, and are outlined in the January 1, 2020 funding valuation report unless otherwise stated in this report.

Highlights of the results for the Arlington Retirement System as of December 31, 2020 are as follows:

Total Pension Liability (TPL)	\$ 314,810,592
Plan Fiduciary Net Position (FNP)	<u>191,455,945</u>
System's Net Pension Liability (NPL)	\$ 123,354,647
Plan FNP as a percentage of the TPL	60.8%
Covered Payroll	\$ 44,115,863
Plan NPL as a percentage of Covered Payroll	279.6%
Pension Expense	\$ 10,480,208

NOTE: Totals in this report may not sum due to rounding

The TPL, FNP, and NPL are all developed and discussed on the following two pages, followed by the pension expense and deferrals.

Distribution of the Member Population

As of January 1, 2020, the following employees were covered by the benefits terms:

Inactive employees or beneficiaries currently receiving benefits	608
Inactive employees entitled to a return of contributions	372
Active employees	<u>812</u>
TOTAL	1,792

Changes to the Net Pension Liability

	Total Pension Liability (a)	Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
Balances at beginning of Measurement Period (01/01/2020)	\$ 307,379,345	\$ 173,733,342	\$ 133,646,003
Changes for the Year:			
Service Cost	6,474,391		6,474,391
Interest	21,281,611		21,281,611
Change in benefit terms	0		0
Differences between expected and actual experience	3,443,517		3,443,517
Change in assumptions	(4,106,825)		(4,106,825)
Contributions - employer		13,802,754	(13,802,754)
Contributions - employee		4,291,749	(4,291,749)
Net investment income		19,645,202	(19,645,202)
Benefit payments, including refunds of employee contributions	(19,661,447)	(19,661,447)	0
Administrative expense		(355,654)	355,654
Other changes		0	0
Net Changes	<u>7,431,247</u>	<u>17,722,603</u>	<u>(10,291,356)</u>
Balances at end of Measurement Period (12/31/2020)	\$ 314,810,592	\$ 191,455,945	\$ 123,354,647

*Update procedures were used to roll the Total Pension Liability forward from the valuation date (01/01/2020) to the measurement date (12/31/2020). [GASB 68, Paragraph 80 c.]

CHANGES IN METHODS, ASSUMPTIONS, AND PLAN PROVISIONS

The January 1, 2020 valuation included a change of mortality assumption, which reduced the Total Pension Liability by \$4.1M. This is the figure shown above for "change in assumptions".

Projection of the Net Pension Liability

TOTAL PENSION LIABILITY (TPL)

The Total Pension Liability at the beginning of the measurement period (01/01/2020) is equal to the TPL from the end of the previous measurement period. The TPL is rolled forward through each measurement period by:

- Adding the Service Cost,
- Subtracting benefits paid,
- Applying interest (as calculated on page 6), and
- Recognizing any changes from new valuation results.

The Actuarial Accrued Liability (AAL), calculated as of the valuation date, is compared to the projected TPL. The difference between the two figures is measured as of the measurement date, and allocated to the following categories:

- Changes in assumptions
- Changes of plan provisions
- The remainder of the difference is allocated to "Differences between actual and expected experience"

All of these changes are recognized immediately in the TPL. Their treatment in the pension expense is discussed on the following page. Note that the TPL shown includes a 1/1/2020 liability of \$(1,076,041) for net 3(8)(c) payments, calculated by assuming that every dollar of 3(8)(c) net benefit generates the same amount of liability as a dollar of the total retirement benefit, and rolled forward with the rest of the TPL. This method differs from the funding valuation, where net 3(8)(c) payments are funded on a pay-as-you-go basis and no explicit liability is calculated.

The TPL also includes an additional 1/1/20 liability of \$1,350,337 for payments related to Section 90 of MGL Chapter 32, and an additional 1/1/20 normal cost of \$28,127. Section 90 benefits were projected by assuming that benefit payments from section 90 would remain a contract percentage of benefits overall, and applying a longevity factor to each increase granted, based on the actual projected lifespan of the retirees currently receiving the increases.

PLAN FIDUCIARY NET POSITION (FNP) AND NET PENSION LIABILITY (NPL)

GASB Statement No. 68, Paragraph 59 requires that the fair value of assets be used for the Fiduciary Net Position. For the fair value of assets we used the market value of assets adjusted by payables and receivables.

The Net Pension Liability (NPL) is the portion of the TPL not covered by the FNP. This amount is presented as a percentage of covered payroll. The NPL ratio for the Arlington Retirement System is 279.6% of covered pay. In this report, covered pay is reported as described in GASB Statement No. 82 – pensionable payroll for the measurement period.

PENSION EXPENSE AND NET DEFERRALS

For the Pension Expense, gain and losses are recognized over a period of multiple years, with a portion being recognized immediately and the remainder being added to deferred inflows and outflows:

- Asset gains and losses are recognized over a five-year period [GASB 68, Paragraph 71b]
- Experience and Assumption changes are recognized over the average remaining service of the current members [GASB 68, Paragraph 71a]
- Plan provision changes are recognized immediately

Some inflows/outflows which originated in prior measurement periods will continue to be recognized this period. The total amount to be recognized this period is part of the pension expense; the remainder is included in the deferrals. Both are shown on the following page, and are calculated in greater detail on pages 9-10.

RESULTS BY EMPLOYER

Exhibits are provided beginning on page 14 which provide individual results for the various employers that make up the Arlington Retirement System. Pension expense, as well as any deferred inflows and outflows of resources, and any excess contribution generated by Federal Grants, have been allocated to the various employers in the same manner as the FY2021 appropriation.

Per GASB 68, the change in proportionality from FY2020 to FY2021 if the individual employers' NPL and deferred inflows and outflows need to be allocated to the individual employers. This is calculated on page 16. These amounts are then recognized over the average remaining service, which is 4.8 years. The recognition of proportion changes is developed on page 17.

Pension Expense for the Fiscal Year Ended June 30, 2021

NOTE*	Description	Fiscal 2021
A	Service Cost	\$ 6,474,391
A, B	Interest on the Total Pension Liability	21,281,611
C	Differences between Expected and Actual Experience	716,013
D	Changes of Assumptions	1,462,390
D	Changes to Benefit Provisions	0
A	Employee Contributions	(4,291,749)
E	Projected Earnings on Pension Plan Investments	(12,094,043)
F	Differences between Projected and Actual Earnings on Plan Investments	(3,424,059)
A	Pension Plan Administrative Expense	355,654
A	Other Changes in Fiduciary Net Position	<u>0</u>
	Total Pension Expense	\$ 10,480,208

* Notes shown on following page.

Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

	Deferred Outflows Of Resources	Deferred Inflows Of Resources
Differences between expected and actual experience	\$ 2,884,142	\$ (1,089,384)
Changes of assumptions	2,549,466	(3,381,001)
Net difference between projected and actual earnings on pension plan investments	<u>0</u>	<u>(10,328,991)</u>
TOTAL	\$ 5,433,608	\$ (14,799,377)

Year Ending December 31, *	Recognition
2021	\$ (2,386,641)
2022	\$ (872,748)
2023	\$ (4,485,597)
2024	\$ (1,620,783)
2025	\$ 0
Thereafter	\$ 0

*The years are based on measurement date. For GASB 68, the year ending December 31, 2021 is Fiscal 2022.

NOTES

- A. See the RSI schedule of changes to the net pension liability, on page 2.
- B. Events that impact the total pension liability are assumed to happen evenly throughout the period. In addition, the amount of interest on the total pension liability is calculated using an interest rate equal to the discount rate that was used to determine the service cost. The amount is determined as follows:

Description	Amount for Period (a)	Portion of Period (b)	Interest Rate (c)	Interest on the TPL (a) x (b) x (c)
Beginning TPL	\$ 307,379,345	100%	7.00%	\$ 21,516,554
Service cost	6,474,391	100%	7.00%	453,207
Benefit payments	(19,661,447)	50%	7.00%	(688,151)
Total interest on the NPL				\$ 21,281,611

- C. Differences between expected and actual experience recognized in the current period in accordance with paragraph 71a of Statement 68. For the detailed calculation of the recognition of this amount, see the schedules on page 9.
- D. Assumption and plan provision changes recognized in pension expense in the current period in accordance with paragraph 71a of Statement 68. For detailed calculation of the recognition of these amounts, see the schedule on page 9.
- E. Changes in the amounts invested are assumed to occur evenly throughout the period. In addition, the amount of projected earnings on pension plan investments is calculated using the assumed rate of return on pension plan investments as of the beginning of the period. The amount is determined as follows:

Description	Amount for Period (a)	Portion of Period (b)	Projected Rate of Return (c)	Projected Earnings (a) x (b) x (c)
Beginning FNP	\$ 173,733,342	100%	7.00%	\$ 12,161,334
Employer contributions	13,802,754	50%	7.00%	483,096
Employee contributions	4,291,749	50%	7.00%	150,211
Benefit payments	(19,661,447)	50%	7.00%	(688,151)
Administrative expense and other	(355,654)	50%	7.00%	(12,448)
Total projected earnings				\$ 12,094,043
Actual investment earnings				<u>19,645,202</u>
Difference: (Gain)/Loss				\$ (7,551,159)

- F. Differences between projected and actual earnings recognized in the current period in accordance with paragraph 71b of Statement 68. For detailed calculation of the recognition of this amount, see the schedule on page 9.

Discount Sensitivity

The following presents the Arlington Retirement System's Net Pension Liability calculated at the valuation discount rate of 7.00%, as well as at discount rates one percent lower (6.00%) and one percent higher (8.00%).

Fiscal Year	1% Decrease (6.00%)	Current Discount Rate (7.00%)	1% Increase (8.00%)
2021	\$ 156,436,091	\$ 123,354,647	\$ 95,337,796

Long-Term Expected Real Rate of Return

The long-term expected real rate of return reflects the expected rate of return on plan assets minus the expected rate of inflation. Note that the discount rate includes the effect of inflation. The long-term real rate of return removes the effect of inflation on the return amounts. It is a long-term assumption and is meant to reflect a best estimate of future experience, based on the expected asset allocation.

Allocation percentages are based on information provided by the Arlington Retirement System, and PRIT's asset consultant, NEPC. The real rates of return below are based on 30-year return estimates provided by NEPC through the Pension Reserve Investment Trust, adjusted using NEPC's 2.20% inflation assumption.

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return (Geometric Average)
US Equity	13.0%	4.11%
International Equities	13.0%	4.31%
Emerging Equities	5.0%	6.07%
Hedged Equity	8.0%	3.42%
Core Bonds	6.0%	0.49%
Short-Term Fixed Income	2.0%	-0.20%
Treasury STRIPS	3.0%	-0.49%
TIPS/ILBs	4.0%	-0.10%
Value-Added Fixed Income	8.0%	3.91%
Private Equity	14.0%	7.83%
Real Estate	10.0%	3.72%
Timberland	4.0%	4.31%
Portfolio Completion (PCS)	10.0%	2.94%

Development of Results

DISCOUNT RATE

Projections were made using a discount rate assumption of 7.00%, which is consistent with the actuarial funding valuation. One of the objectives of the provisions of GASB 68 is to examine how benefit payments and plan contributions and investment earnings interact on a cash flow basis. GASB requires that these amounts be calculated with Market Value of Assets and using the Entry Age Normal cost method.

Projected contributions for each year are the sum of:

- Projected normal cost,
- Amortization of the unfunded liability,
- Administrative expense, and
- Other benefit costs such as 3(8)(c) payments.

The amortization bases and periods are consistent with those seen in the valuation report. Administrative expenses are increased by 4.50% per year. The Arlington Retirement System's Fiduciary Net Position was projected to be available to make all future benefit payments of current active and inactive employees. Thus, the long-term expected rate of return on investments was applied for all benefit periods when calculating the Net Pension Liability.

The long-term rate of return which was used to develop the discount rate of 7.00% includes the effect of inflation (not subtracted out as in the real rates of return). It is based on a combination of expected rates of return on the mix of current and expected investments over a long-term period. These expectations are based on current market conditions, historical experience and future expectations. It assumes a rebalancing of assets on an ongoing basis as well as a constant monitoring of asset allocation and manager performance.

EXHIBITS

The recognition and deferral of various gains and losses are developed on the following two pages. These are followed by historical exhibits displaying changes in the NPL and contribution amounts for past years, the money-weighted rate of return, and finally the exhibits which display results by employer.

Increase / (Decrease) in Pension Expense Arising from the Recognition of the Effects of Differences between Expected and Actual Experience

Year	Differences between actual and expected experience	Recognition period (years)	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
2016	\$ (1,852,380)	4.8	\$ (385,913)	\$ (385,913)	\$ (385,913)	\$ (385,913)	\$ (308,730)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2017	\$ 1,290,391	4.7	\$ -	\$ 274,551	\$ 274,551	\$ 274,551	\$ 274,551	\$ 192,186	\$ -	\$ -	\$ -	\$ -	\$ -
2018	\$ 810,484	4.5	\$ -	\$ -	\$ 180,108	\$ 180,108	\$ 180,108	\$ 180,108	\$ 90,054	\$ -	\$ -	\$ -	\$ -
2019	\$ 203,912	4.5	\$ -	\$ -	\$ -	\$ 45,314	\$ 45,314	\$ 45,314	\$ 45,314	\$ 22,657	\$ -	\$ -	\$ -
2020	\$ (1,927,372)	4.6	\$ -	\$ -	\$ -	\$ -	\$ (418,994)	\$ (418,994)	\$ (418,994)	\$ (418,994)	\$ (251,396)	\$ -	\$ -
2021	\$ 3,443,517	4.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 717,399	\$ 717,399	\$ 717,399	\$ 717,399	\$ 573,920	\$ -
Net increase (decrease) in pension expense			\$ (385,913)	\$ (111,361)	\$ 68,746	\$ 114,060	\$ (227,751)	\$ 716,013	\$ 433,773	\$ 321,062	\$ 466,003	\$ 573,920	\$ -

Increase / (Decrease) in Pension Expense Arising from the Recognition of the Effects of Changes of Assumptions

Year	Change of assumptions	Recognition period (years)	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
2017	\$ 5,894,235	4.7	\$ -	\$ 1,254,093	\$ 1,254,093	\$ 1,254,093	\$ 1,254,093	\$ 877,865	\$ -	\$ -	\$ -	\$ -	\$ -
2018	\$ (1,167,885)	4.5	\$ -	\$ -	\$ (259,530)	\$ (259,530)	\$ (259,530)	\$ (259,530)	\$ (129,765)	\$ -	\$ -	\$ -	\$ -
2019	\$ 7,648,397	4.5	\$ -	\$ -	\$ -	\$ 1,699,644	\$ 1,699,644	\$ 1,699,644	\$ 1,699,644	\$ 849,822	\$ -	\$ -	\$ -
2020	\$ -	4.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2021	\$ (4,106,825)	4.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (855,588)	\$ (855,588)	\$ (855,588)	\$ (855,588)	\$ (684,471)	\$ -
Net increase (decrease) in pension expense			\$ -	\$ 1,254,093	\$ 994,563	\$ 2,694,206	\$ 2,694,206	\$ 1,462,390	\$ 714,290	\$ (5,767)	\$ (855,588)	\$ (684,471)	\$ -

Increase / (Decrease) in Pension Expense Arising from the Recognition of Differences between Expected and Actual Earnings on Pension Plan Investments

Year	Differences between projected and actual earnings on pension plan investments	Recognition period (years)	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
2016	\$ 8,557,764	5	\$ 1,711,553	\$ 1,711,553	\$ 1,711,553	\$ 1,711,553	\$ 1,711,553	\$ -	\$ -	\$ -	\$ -	\$ -
2017	\$ 553,226	5	\$ -	\$ 110,645	\$ 110,645	\$ 110,645	\$ 110,645	\$ 110,645	\$ -	\$ -	\$ -	\$ -
2018	\$ (11,733,299)	5	\$ -	\$ -	\$ (2,346,660)	\$ (2,346,660)	\$ (2,346,660)	\$ (2,346,660)	\$ (2,346,660)	\$ -	\$ -	\$ -
2019	\$ 14,539,836	5	\$ -	\$ -	\$ -	\$ 2,907,967	\$ 2,907,967	\$ 2,907,967	\$ 2,907,967	\$ 2,907,967	\$ -	\$ -
2020	\$ (12,928,899)	5	\$ -	\$ -	\$ -	\$ -	\$ (2,585,780)	\$ (2,585,780)	\$ (2,585,780)	\$ (2,585,780)	\$ (2,585,780)	\$ -
2021	\$ (7,551,159)	5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (1,510,232)	\$ (1,510,232)	\$ (1,510,232)	\$ (1,510,232)	\$ (1,510,232)
Net increase (decrease) in pension expense			\$ 1,712,416	\$ 1,823,062	\$ (523,598)	\$ 2,384,369	\$ (202,274)	\$ (3,424,059)	\$ (3,534,704)	\$ (1,188,044)	\$ (4,096,011)	\$ (1,510,232)

Deferred Outflows and Deferred Inflows of Resources Arising from Differences between Expected and Actual Experience

				BALANCES AT JUNE 30, 2021	
Year	Experience Losses (a)	Experience Gains (b)	Amounts Recognized in Pension Expense through June 30, 2021 (c)	Deferred Outflows of Resources (a) - (c)	Deferred Inflows of Resources (b) - (c)
2016	\$ -	\$ (1,852,380)	\$ (1,852,380)	\$ -	\$ -
2017	\$ 1,290,391	\$ -	\$ 1,290,391	\$ -	\$ -
2018	\$ 810,484	\$ -	\$ 720,431	\$ 90,054	\$ -
2019	\$ 203,912	\$ -	\$ 135,941	\$ 67,971	\$ -
2020	\$ -	\$ (1,927,372)	\$ (837,988)	\$ -	\$ (1,089,384)
2021	\$ 3,443,517	\$ -	\$ 717,399	\$ 2,726,118	\$ -
TOTAL				\$ 2,884,142	\$ (1,089,384)

Deferred Outflows and Deferred Inflows of Resources Arising from Changes of Assumptions

				BALANCES AT JUNE 30, 2021	
Year	Increases in the Total Pension Liability (a)	Decreases in the Total Pension Liability (b)	Amounts Recognized in Pension Expense through June 30, 2021 (c)	Deferred Outflows of Resources (a) - (c)	Deferred Inflows of Resources (b) - (c)
2017	\$ 5,894,235	\$ -	\$ 5,894,235	\$ -	\$ -
2018	\$ -	\$ (1,167,885)	\$ (1,038,120)	\$ -	\$ (129,765)
2019	\$ 7,648,397	\$ -	\$ 5,098,931	\$ 2,549,466	\$ -
2020	\$ -	\$ -	\$ -	\$ -	\$ -
2021	\$ -	\$ (4,106,825)	\$ (855,588)	\$ -	\$ (3,251,236)
TOTAL				\$ 2,549,466	\$ (3,381,001)

Deferred Outflows and Deferred Inflows of Resources
Arising from Differences between Expected and Actual Earnings on Pension Plan Investments

				BALANCES AT JUNE 30, 2021	
Year	Investment Earnings Less than Projected (a)	Investment Earnings More than Projected (b)	Amounts Recognized in Pension Expense through June 30, 2021 (c)	Deferred Outflows of Resources (a) - (c)	Deferred Inflows of Resources (b) - (c)
2017	\$ 553,226	\$ -	\$ 553,226	\$ -	\$ -
2018	\$ -	\$ (11,733,299)	\$ (9,386,639)	\$ -	\$ (2,346,660)
2019	\$ 14,539,836	\$ -	\$ 8,723,902	\$ 5,815,935	\$ -
2020	\$ -	\$ (12,928,899)	\$ (5,171,560)	\$ -	\$ (7,757,339)
2021	\$ -	\$ (7,551,159)	\$ (1,510,232)	\$ -	\$ (6,040,927)
TOTAL				\$ 5,815,935	\$ (16,144,926)
NET TOTAL					\$ (10,328,991)

**Schedule of Changes in Arlington's
Net Pension Liability and Related Ratios**

(Amounts in Thousands)

Fiscal Year *	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
TOTAL PENSION LIABILITY										
Service cost	6,474	6,037	5,777	5,528	5,193	4,956	4,744			
Interest	21,282	20,865	20,433	19,910	18,902	19,166	18,685			
Change of benefit terms	-	-	659	-	-	-	-			
Differences between expected and actual experience	3,444	(1,927)	204	810	1,290	(1,852)	-			
Change of assumptions	(4,107)	-	7,648	(1,168)	5,894	-	-			
Benefit payments , including refunds of employee contributions	(19,661)	(19,257)	(18,226)	(18,002)	(17,446)	(17,220)	(17,230)			
Net change in total pension liability	7,431	5,717	16,495	7,079	13,834	5,050	6,200			
Total pension liability - beginning	307,379	301,662	285,167	278,088	264,254	259,204	253,004			
Total pension liability - ending	314,811	307,379	301,662	285,167	278,088	264,254	259,204			
PLAN FIDUCIARY NET POSITION										
Contributions - employer	13,803	13,032	12,353	11,719	11,123	10,546	9,993			
Contributions - employee	4,292	4,221	3,882	3,831	3,517	3,458	3,321			
Net Investment Income	19,645	23,526	(3,165)	21,719	8,995	1,460	9,584			
Benefit payments , including refunds of employee contributions	(19,661)	(19,257)	(18,226)	(18,002)	(17,446)	(17,220)	(17,230)			
Administrative expense	(356)	(356)	(347)	(325)	(334)	(291)	(296)			
Other	-	-	-	-	-	-	-			
Net change in plan fiduciary net position	17,723	21,166	(5,502)	18,942	5,856	(2,047)	5,373			
Plan fiduciary net position - beginning	173,733	152,567	158,070	139,128	133,272	135,319	129,946			
Plan fiduciary net position - end	191,456	173,733	152,567	158,070	139,128	133,272	135,319			
Arlington net pension liability - ending	123,355	133,646	149,095	127,097	138,960	130,982	123,885			
Plan fiduciary net position as a percentage of the total pension liability	60.8%	56.5%	50.6%	55.4%	50.0%	50.4%	52.2%			
Covered payroll (calendar year timing)	44,116	42,251	40,230	39,067	36,526	35,280	32,939			
Arlington's net pension liability as a percentage of covered payroll	279.6%	316.3%	370.6%	325.3%	380.4%	371.3%	376.1%			

Note: sums may not total due to rounding

Information not available prior to 2015

Schedule of Plan Contributions

(Amounts in Thousands)

Fiscal Year	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Actuarially determined contribution	\$ 13,799	\$ 13,018	\$ 12,339	\$ 11,696	\$ 11,086	\$ 10,508	\$ 9,961			
Contributions in relation to the actuarially determined contribution	<u>(13,803)</u>	<u>(13,032)</u>	<u>(12,353)</u>	<u>(11,719)</u>	<u>(11,123)</u>	<u>(10,546)</u>	<u>(9,993)</u>			
Contribution deficiency / (excess)*	(4)	(14)	(13)	(23)	(36)	(38)	(33)			
Covered payroll (fiscal year timing)	\$ 45,258	\$ 43,339	\$ 41,240	\$ 40,029	\$ 37,425	\$ 35,280	\$ 33,755			
Contributions as a percentage of covered payroll	30.5%	30.1%	30.0%	29.3%	29.7%	29.9%	29.6%			

* Excess is due to Federal Grants

Information not available for years prior to 2015

GASB Statement No. 67, Paragraph 30 b. (4)
Money-Weighed Rate of Return, 2020

New External Cash Flows						
	Beginning of month	Middle of Month	End of Month	Periods Invested**	Investment Return	Cash Flow with Return
Starting Value* (12/31/2019)	\$ 173,625,621.23			12	\$ 19,971,106.33	\$ 193,596,727.56
Cash Flows:						
January	180,074.28	56,547.09	(1,534,113.43)	11	(134,078.24)	(1,431,570.30)
February	143,357.24	0.00	(2,010,839.22)	10	(175,930.10)	(2,043,412.08)
March	602,920.96	196,482.72	(1,799,850.70)	9	(78,189.39)	(1,078,636.41)
April	213,333.59	248,853.41	(1,897,616.27)	8	(104,756.06)	(1,540,185.33)
May	242,628.97	98,988.50	(1,454,293.65)	7	(70,123.46)	(1,182,799.64)
June	91,001.89	160,673.34	(1,657,020.73)	6	(76,977.55)	(1,482,323.05)
July	501,398.89	10,526.26	11,802,017.66	5	576,318.24	12,890,261.05
August	109,263.63	55,376.86	(1,545,689.67)	4	(49,747.83)	(1,430,797.01)
September	123,018.39	154,691.73	(1,672,737.90)	3	(36,617.79)	(1,431,645.57)
October	261,701.58	61,604.84	(1,584,813.97)	2	(20,386.12)	(1,281,893.67)
November	181,374.63	171,992.72	(1,726,011.55)	1	(10,053.35)	(1,382,697.55)
December	209,010.49	456,134.65	(1,582,981.15)	0	3,978.93	(913,857.08)
Ending Value* (12/31/2020)	\$191,287,170.92			Sum:	\$ 19,794,543.61	\$ 191,287,170.92

* Value shown does not include any payables or receiveables, except those related to investments.

** Middle of period cash flows are given an additional half period of interest, and beginning of period cash flows are given an additional full period.

Return Rate:	11.50%
--------------	--------

Results by Employer

Employer	Covered Payroll*	Proportionate Share of NPL	Proportionate share of NPL as a percentage of covered payroll*	Proportionate share of NPL Discount Sensitivity	
				1% Increase (8.00%)	1% Decrease (6.00%)
Town and School	\$ 42,407,412	\$ 118,408,126	279.2%	\$ 91,514,750	\$ 150,163,004
Arlington Housing Authority	\$ 1,708,451	\$ 4,946,521	289.5%	\$ 3,823,046	\$ 6,273,087
TOTAL	\$ 44,115,863	\$ 123,354,647	279.6%	\$ 95,337,796	\$ 156,436,091

Employer	Actuarially determined contribution FY2021	Contributions made for FY 2021	Contribution deficiency (excess)	Contributions as a percentage of covered payroll**
Town and School	\$ 13,246,911	\$ (13,250,411)	\$ (3,500)	30.5%
Arlington Housing Authority	\$ 552,197	\$ (552,343)	\$ (146)	31.5%
TOTAL	\$ 13,799,108	\$ (13,802,754)	\$ (3,646)	30.5%

Employer	Proportion	Proportionate Share of Pension Expense	Proportion changes and differences between employer contributions and proportionate share recognized as expense	Total Pension Expense
Town and School	95.99%	\$ 10,059,952	\$ (40,422)	\$ 10,019,530
Arlington Housing Authority	4.01%	\$ 420,256	\$ 40,422	\$ 460,679
TOTAL	100.00%	\$ 10,480,208		

* Covered Payroll is the projected amount for the 2020 calendar year based on employee data as of December 31, 2019

** Here the Covered Payroll figure is projected for Fiscal Year 2021, based on employee data as of December 31, 2019

Deferred Outflows of Resources by Employer

Employer	Differences between expected and actual experience*	Changes of assumptions*	Net difference between projected and actual earnings on pension plan investments*	Changes in proportion and differences between employer contributions and proportionate share of contributions	Employer contributions subsequent to the measurement date	Total Deferred Outflows of Resources
Town and School	\$ 2,768,488	\$ 2,447,232	\$ -	\$ 42,281	\$ -	\$ 5,258,001
Arlington Housing Authority	\$ 115,654	\$ 102,234	\$ -	\$ 399,463	\$ -	\$ 617,351
TOTAL	\$ 2,884,142	\$ 2,549,466	\$ -	\$ 441,744	\$ -	\$ 5,875,352

Deferred Inflows of Resources by Employer

Employer	Differences between expected and actual experience*	Changes of assumptions*	Net difference between projected and actual earnings on pension plan investments*	Changes in proportion and differences between employer contributions and proportionate share of contributions	Employer contributions subsequent to the measurement date	Total Deferred Inflows of Resources
Town and School	\$ 1,045,700	\$ 3,245,423	\$ 9,914,799	\$ 399,463	N/A	\$ 14,605,385
Arlington Housing Authority	\$ 43,684	\$ 135,578	\$ 414,193	\$ 42,281	N/A	\$ 635,736
TOTAL	\$ 1,089,384	\$ 3,381,001	\$ 10,328,991	\$ 441,744	N/A	\$ 15,241,121

Recognition of Deferred Outflows and Deferred Inflows

AMOUNT TO BE RECOGNIZED FOR THE YEAR ENDING DECEMBER 31,						
Employer	2021	2022	2023	2024	2025	Thereafter
Town and School	\$ (2,367,965)	\$ (937,821)	\$ (4,404,202)	\$ (1,637,395)	\$ -	\$ -
Arlington Housing Authority	\$ (18,676)	\$ 65,073	\$ (81,395)	\$ 16,613	\$ -	\$ -
TOTAL	\$ (2,386,641)	\$ (872,748)	\$ (4,485,597)	\$ (1,620,783)	\$ -	\$ -

* Deferred Outflows and Inflows due to experience, assumptions, and investment return are allocated according to each employer's proportion of the NPL.

Effects of Changes in Proportion on Employers' Proportionate Share of NPL, and Deferred Inflows and Deferred Outflows of Resources

Employer	Proportion Change			FY2021 Contribution		
	Prior Proportionate Share of Prior NPL net of Deferrals	Share of Prior NPL based on Current Proportion of NPL	Difference (A)	Proportionate Share of Contribution based on Share of NPL	Amount Paid	Difference (B)
Town and School	\$ 131,078,422	\$ 130,587,640	\$ (490,783)	\$ 13,249,264	\$ 13,250,411	\$ 1,147
Arlington Housing Authority	\$ 4,964,540	\$ 5,455,323	\$ 490,783	\$ 553,490	\$ 552,343	\$ (1,147)
TOTAL	\$ 136,042,962	\$ 136,042,962	\$ -	\$ 13,802,754	\$ 13,802,754	\$ -

Employer	Total Proportion Change (A) + (B)	Recognized as Pension Expense*	Deferred for later recognition
Town and School	\$ (489,635)	\$ (102,007)	\$ (387,628)
Arlington Housing Authority	\$ 489,635	\$ 102,007	\$ 387,628
TOTAL	\$ -	\$ -	\$ -

* Based on an average remaining service life of 4.8 years.

Recognition of Proportion Changes

Proportion Changes by Employer / Year

Employer	2021	2020	2019	2018	2017	2016	2015
Town and School	\$ (489,635)	\$ 27,060	\$ (35,505)	\$ 242,877	\$ 64,590	\$ 12,333	N/A
Arlington Housing Authority	\$ 489,635	\$ (27,060)	\$ 35,505	\$ (242,877)	\$ (64,590)	\$ (12,333)	N/A

Average Remaining Service Life by Year

2021	4.8
2020	4.6
2019	4.5
2018	4.5
2017	4.7
2016	4.8

Recognition Percentages by Year

Year of Gain/Loss	Percentage Recognized by Year*						
	2021	2022	2023	2024	2025	2026	Thereafter
2021	20.8%	20.8%	20.8%	20.8%	16.7%	0.0%	0.0%
2020	21.7%	21.7%	21.7%	13.0%	0.0%	0.0%	0.0%
2019	22.2%	22.2%	11.1%	0.0%	0.0%	0.0%	0.0%
2018	22.2%	11.1%	0.0%	0.0%	0.0%	0.0%	0.0%
2017	14.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

* Percentages shown are rounded for display purposes.

Recognition Amounts by Year

Outflows

	2021	2022	2023	2024	2025	2026	Thereafter
Town and School	\$ 69,475	\$ 32,869	\$ 5,883	\$ 3,530	\$ -	\$ -	\$ -
Arlington Housing Authority	\$ 109,897	\$ 109,897	\$ 105,952	\$ 102,007	\$ 81,606	\$ -	\$ -

Inflows

	2021	2022	2023	2024	2025	2026	Thereafter
Town and School	\$ 109,897	\$ 109,897	\$ 105,952	\$ 102,007	\$ 81,606	\$ -	\$ -
Arlington Housing Authority	\$ 69,475	\$ 32,869	\$ 5,883	\$ 3,530	\$ -	\$ -	\$ -

TOTALS

	2021	2022	2023	2024	2025	2026	Thereafter
Town and School	\$ (40,422)	\$ (77,028)	\$ (100,070)	\$ (98,478)	\$ (81,606)	\$ -	\$ -
Arlington Housing Authority	\$ 40,422	\$ 77,028	\$ 100,070	\$ 98,478	\$ 81,606	\$ -	\$ -

Reconciliation of Changes in the NPL

Employer	NPL, Beginning of Measurement Period	Contributions made for FY 2021	Change in Net Deferrals (calculated below)	Pension Expense	Proportion Change	NPL, End of Measurement Period
Town and School	\$ 128,768,934	\$ (13,250,411)	\$ (6,680,714)	\$ 10,059,952	\$ (489,635)	\$ 118,408,126
Arlington Housing Authority	\$ 4,877,069	\$ (552,343)	\$ (288,096)	\$ 420,256	\$ 489,635	\$ 4,946,521
TOTAL	\$ 133,646,003	\$ (13,802,754)	\$ (6,968,810)	\$ 10,480,208	\$ -	\$ 123,354,647

Employer	Net Deferrals, Beginning of Measurement Period	Net Deferrals, End of Measurement Period	Change in Net Deferrals
Town and School	\$ (2,309,488)	\$ (8,990,202)	\$ (6,680,714)
Arlington Housing Authority	\$ (87,471)	\$ (375,567)	\$ (288,096)
TOTAL	\$ (2,396,959)	\$ (9,365,769)	\$ (6,968,810)

GASB Statements No. 74 and 75
Report for Fiscal Year 2021

Town of Arlington



stoneconsulting,inc

5 West Mill Street, Suite 4
Medfield, Massachusetts 02052
T: 508.359.9600 • F: 508.359.0190
Jmoreau@stoneconsult.com
Cedgar@stoneconsult.com

TABLE OF CONTENTS

	PAGE
Actuarial Certification	
SECTION I – ACTUARIAL RESULTS.....	1
Summary of Results.....	1
GASB Statement No. 74 – Net OPEB Liability.....	3
Changes from Prior Report	4
Distribution of the Member Population	4
Development of Exhibits.....	5
Discount Sensitivity	6
Trend Sensitivity	6
Long-Term Expected Real Rate of Return.....	7
Schedule of Changes in OPEB Trust Net OPEB Liability and Related Ratios – GASB 74	8
Schedule of Plan Contributions - GASB 74.....	9
Funding Schedule.....	10
GASB Statement No. 74, Paragraph 34 b. (3) - Money-Weighted Rate of Return.....	10
Changes in the Net OPEB Liability [GASB 75, Paragraph 55].....	11
Projection of the Net OPEB Liability.....	12
OPEB Expense Components.....	13
OPEB Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to OPEB [GASB 75, Paragraph 56 h.]	15
Increase / (Decrease) in OPEB Expense Arising from the Recognition of Gains and Losses – GASB 75 ...	16
Deferred Outflows and Deferred Inflows of Resources Arising from Gains and Losses.....	17
Results by Employer.....	18
SECTION II - ACTUARIAL VALUATION DETAILS.....	19
Population Data	19
SECTION III – APPENDICES.....	22
Actuarial Methods.....	22
Actuarial Assumptions	22
Principal Plan Provisions Recognized in Valuation.....	30
Glossary.....	32

December 10, 2021

Ms. Ida Cody
Comptroller
Town of Arlington
869 Massachusetts Avenue
Arlington, MA 02474

Dear Ms. Cody:

For the purpose of satisfying the requirements of the Government Accounting Standards Board (GASB) Statements No. 74 and No. 75, Stone Consulting, Inc. has prepared a set of illustrative tables and other Required Supplementary Information (RSI) based on the January 1, 2020 actuarial valuation of the Town of Arlington Other Post-employment Benefits (OPEB) plan performed by Stone Consulting, Inc. The valuation and this report were prepared using generally accepted actuarial principles and practices and meet the parameters set by the Governmental Accounting Standards Board (GASB).

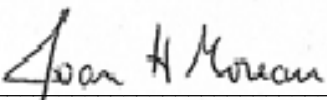
For GASB 74, the results are as of a valuation date of January 1, 2020, and an OPEB plan Fiscal Year-end of June 30, 2021. For GASB 75, the results are as of a valuation date of January 1, 2020, a measurement date of June 30, 2021, and a reporting date of June 30, 2021. To the best of our knowledge, this report is complete and accurate, and the assumptions used represent our best estimate of anticipated experience of the system unless required by statute or by the GASB standard.

We are pleased to present these exhibits. If the Town of Arlington or the Town of Arlington OPEB Trust has any questions on the content of this report, we would be glad to respond. Please note that this report is meant to be used in its entirety. Use of excerpts of this report may result in a misleading or inaccurate understanding of the results.

Stone Consulting, Inc. is completely independent of the Town of Arlington or the Town of Arlington OPEB Trust, including any of their officers and key personnel. Neither we or anyone else closely associated with us has any relationship with the Town of Arlington or the Town of Arlington OPEB Trust which would impair our independence, other than this or related assignments, such as work for the Town of Arlington Retirement System.

The undersigned are consultants for Stone Consulting, Inc. and members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,
STONE CONSULTING, INC.


Joan H. Moreau, ASA
Member, American Academy of Actuaries


Kevin K. Gabriel, FSA
Member, American Academy of Actuaries

SECTION I – ACTUARIAL RESULTS

Summary of Results

The most recent actuarial OPEB valuation performed by Stone Consulting for the Town of Arlington was on January 1, 2020. Participant census data as of January 1, 2020 was supplied by the Town of Arlington and liabilities were first determined as of that date. Update procedures were used to roll the Total OPEB Liability from the valuation date to June 30, 2021, the OPEB plan's Fiscal Year-end (GASB 74) and the measurement date (GASB 75).

The key results as of June 30, 2021 were:

Total OPEB Liability	\$ 264,518,341
Plan Fiduciary Net Position	<u>21,268,077</u>
Net OPEB Liability	\$ 243,250,264

- "Total OPEB Liability" is the total liability for all benefits as of the reporting date and is based on a projection of future liabilities based on Town of Arlington's actuarial assumptions.
- "Plan Fiduciary Net Position" is the amount of assets available and in the OPEB trust as of the end of the 2021 Fiscal Year, June 30, 2021.
- "Net OPEB Liability" is the difference between the above two figures and is the amount of the future liability not funded as of the reporting date.

These amounts are calculated by using what is referred to as the "Entry Age Normal" actuarial cost method, which is the method required by GASB. Note, also, that these figures are intended for financial reporting and are not intended to be used to determine funding of the OPEB plan.

Service Cost

Service Cost for Plan Year 2021	\$ 14,360,031
---------------------------------	---------------

Service Cost is the cost of benefits accruing in each year. This figure is based on an interest rate of 2.57% and the Entry Age Normal Cost Method. Because the Service Cost used for Plan Year 2021 is a beginning-of-year number, it is calculated using the discount rate, assumptions, and participant data used in the prior GASB 74/75 report. Changes due to assumptions and experience are then calculated at the end of the measurement period.

Discount Rate at June 30, 2021

Results at June 30, 2021 use a discount rate of 2.62%. The 2.62% is determined based on GASB guidelines and is derived from an assessment of the expected long-term rate of return on Trust assets, the municipal bond rate, and the cash flow of the system. For this purpose, future cash contributions are assumed to be \$935,633 per year, based on recent contributions. Should the future contribution amount schedule change or the target asset allocation change, the valuation discount rate would likely change. Details of this calculation are found on page 5.

Funding

Valuations performed for GASB74/75 purposes are not intended to be funding valuations. Rather, they are intended for use by accountants in developing financial statements. The rules set forth by GASB are designed to ensure that all entities report on a comparable basis. Development of a funding schedule requires additional assumptions and a separate actuarial valuation. Should an entity such as the Town of Arlington wish to develop a plan to fund its liability on an actuarial basis in total or in part, it is free to choose:

- The actuarial cost method used in determining the liability
- The length and amortization of the funding schedule, including establishment of various bases
- Actuarial assumptions, such as the discount rate (this rate would not need to tie into a cash flow analysis such as in Statements 74 and 75)

In general, the funding amount is an amount to cover the Normal Cost (the cost of benefits accruing in each year) for the year plus an amount to amortize the unfunded liability over a period of time using a particular pattern (level, increasing, etc.). This would be done at a discount rate closer to the expected net long-term rate of return of 6.50% .

Use of a different cost method, discount rate, or other assumptions would give a different number for the Normal Cost, the unfunded OPEB Liability, and amortization amount.

The Town of Arlington has not asked Stone Consulting to prepare a funding schedule.

GASB Statement No. 74 – Net OPEB Liability

The components of the Net OPEB Liability for the Town of Arlington OPEB Trust as of an OPEB plan Fiscal Year-end of June 30, 2021 were as follows:

	FY 2021	FY 2020
Total OPEB Liability		
Service Cost	\$ 14,360,031	\$ 9,224,359
Interest	6,771,556	8,624,415
Changes in Benefit Terms	0	0
Differences between expected and actual experience	0	1,341,135
Changes of assumptions	(2,368,129)	31,171,677
Benefit payments	(6,739,480)	(6,361,089)
Net change in Total OPEB liability	\$ 12,023,978	\$ 44,000,497
Total OPEB Liability – beginning (2.57%)	252,494,363	208,493,866
Total OPEB Liability – ending (2.62%) (a)	\$ 264,518,341	\$ 252,494,363
Plan Fiduciary Net Position		
Contributions – employer*	\$ 7,676,012	\$ 7,298,071
Net Investment Income	4,465,599	407,146
Benefit payments	(6,739,480)	(6,361,089)
Administrative expenses	0	0
Net change in Plan Fiduciary Net Position	\$ 5,402,131	\$ 1,344,128
Plan Fiduciary Net Position – beginning	15,865,946	14,521,818
Plan Fiduciary Net Position – ending (b)	\$ 21,268,077	\$ 15,865,946
Net OPEB Liability – ending (a) – (b)	\$ 243,250,264	\$ 236,628,417
Plan Fiduciary Net Position as a percentage of Total OPEB Liability	8.0%	6.3%

*Employer contribution of \$6,739,480 of Pay-As-You-Go and a \$936,532 cash contribution for FY2021.

Update procedures were used to roll the Total OPEB Liability from the valuation date (01/01/2020) to the beginning of the plan's Fiscal Year (07/01/2020) and to the OPEB plan's Fiscal Year-end (06/30/2021). [GASB Statement No. 74, Paragraph 35(c)]

Note: Charts in this report may not total due to rounding.

Changes from Prior Report

The discount rate was changed from 2.57% to 2.62%. The increase is principally due to strong returns on Trust assets during Fiscal Year 2021. Other factors which influenced the discount rate were a change in the municipal bond rate from 2.21% at 6/30/2020 to 2.16% at 6/30/2021 and a change in the assumed long-term rate of return on Arlington assets from 6.75% to 6.50%. See page 5 for more information on how the discount rate is calculated from these factors.

Distribution of the Member Population

Town of Arlington OPEB Trust – Membership as of June 30, 2021

	2021	2020
Retired, Disabled, Survivors and Beneficiaries receiving benefits	836	751
Inactive plan members entitled to but not yet receiving benefit payments *	17	19
Active plan members	1,410	1,389
Total	2,263	2,159

These numbers are based on the data supplied by the Town of Arlington as of June 30, 2021. Note that these membership numbers count a retiree and a spouse as only one member, even if they have separate policies.

* The number of inactive plan members was not available from the MTRS as of June 30, 2021. The inactive count shown here represents inactives for the Town of Arlington only. MTRS inactive data is unavailable, but we believe it is immaterial.

Development of Exhibits

DISCOUNT RATE

Total OPEB Liability as of the plan's Fiscal Year-end (June 30, 2021) is calculated using a discount rate assumption of 2.62%. To calculate this rate, Stone Consulting has conducted a cash flow study of the Trust assets and liabilities. Using a rate consistent with the Trust's investment strategy (6.50%), we determine the length of time for which the assets would support OPEB benefit payments for current and projected new employees. For the Town of Arlington OPEB Trust, the depletion point comes in approximately 21 years. The present value of OPEB benefits is then calculated using a rate consistent with the Trust's investment strategy (6.50%) before the depletion point and a rate based on 20-year Municipal General Obligation bonds as shown in the Bond Buyer 20 Bond Index (2.16% as of June, 2021) after the depletion point. Finally, a single rate producing an equivalent present value of benefits is calculated. This is the 2.62% rate we have used for the Town of Arlington (GASB 75) and the Town of Arlington OPEB Trust (GASB 74). One of the objectives of the provisions introduced by GASB 74 and 75 is to examine how benefit payments and plan contributions and investment earnings interact on a cash flow basis. GASB 74 and 75 require that these amounts be calculated with the Fair Value of Assets and using the Entry Age Normal cost method.

Projected contributions for each year are the sum of cash payments and the pay-as-you-go funding of the retirees. Consistent with the requirements of GASB Statement No. 74 and 75, we have first assigned the contribution to the cost of projected new entrants prior to allocating the remainder to cover existing actives and inactive employees.

In the future, if there are enough assets to cover the cost of new entrants for the entire period of our projection, we will use the long-term rate of return for that period (currently 6.50%).

The long-term rate of return which was used to develop the discount rate of 2.62% includes the effect of inflation (not subtracted out as in the real rates of return). It is based on a combination of expected rates of return on the mix of current and expected investments over a long-term period. These expectations are based on current market conditions, historical experience and future expectations. It assumes a rebalancing of assets on an ongoing basis as well as a constant monitoring of asset allocation and manager performance.

GASB Statement No. 74, Paragraph 34(b)(3) requires that an annual money-weighted rate of return be developed using the market value of assets at the beginning of the Plan Year, along with monthly cash flows. This has been done for the 2021 Fiscal Year, and is shown below:

Fiscal Year	2021
Money-Weighted Rate of Return	26.72%

For detailed calculations of this amount, see the schedule on page 10.

Discount Sensitivity

The following presents Town of Arlington OPEB Trust's Net OPEB Liability calculated at the valuation discount rate of 2.62%, as well as at discount rates one percent higher (3.62%) and one percent lower (1.62%).

OPEB Plan Fiscal Year-End	1% Decrease (1.62%)	Current Discount Rate (2.62%)	1% Increase (3.62%)
06/30/2021	\$ 291,652,367	\$ 243,250,264	\$ 205,203,829

Sensitivity of Current Valuation to Funding Level

To give Town of Arlington and the OPEB Trust some idea of the sensitivity of the discount rate employed in the GASB valuation to the assumed funding level, Stone Consulting has performed depletion analysis under different funding scenarios. If the Town of Arlington were to cease making contributions to the OPEB trust, the discount rate employed would be lowered by 20 basis points from 2.62% to 2.42%. Annual contributions of about \$4.5M would be needed to employ the long-term rate of return of 6.50%. We have not calculated liabilities at the 2.42% rate; however, as required by GASB 74 and shown on page 6 of this report, a 1.62% discount rate increases the Net OPEB Liability from \$243,250,264 to \$291,652,367.

These sensitivity calculations assume the same assumptions and methods as used in the original valuation with only a change in the amount the Town of Arlington plans to contribute. They also assume no change in the Town of Arlington investment strategy. A change in such strategy would also impact the discount rate determined.

Trend Sensitivity

For postretirement medical plans in particular, the calculated actuarial values are highly sensitive to the assumed rate of health care cost trend. This is due to the compounding effect of the annual trend rates assumed for medical costs, as opposed to pension valuations where benefit levels typically remain fixed.

The following table illustrates the effect on our valuation results of a 1% increase or decrease in the assumed rates of health care cost trend in each year.

OPEB Plan Fiscal Year-End	1% Decrease	Base Trend *	1% Increase
06/30/2021	\$ 196,537,271	\$ 243,250,264	\$ 305,931,506

* Base trend rates are found in Actuarial Assumptions and Methods, page 29.

Long-Term Expected Real Rate of Return

The long-term expected real rate of return reflects the expected rate of return on plan assets adjusted for the expected rate of inflation. Note that the discount rate includes the effect of inflation. The long-term real rate of return removes the effect of inflation on the return amounts. It is a long-term assumption and is meant to reflect a best estimate of future experience, based on the expected asset allocation. The allocation percentages are based on information provided by the Town of Arlington and the Plan's asset consultant, Meketa Investment Group, Inc. Expected nominal rates of return are obtained from the Horizon Actuarial Services Survey of Capital Market Assumptions 2021 Edition, adjusted for the Survey's inflation rate of 2.23%.

Asset Category	Current Allocation	Long-Term Expected Real Rate of Return (Geometric)
US Equity	29.70%	4.71%
Developed Market Equity	24.39%	4.80%
Emerging Market Equity	15.67%	5.46%
Investment Grade Bonds	10.43%	1.07%
Short-Term Investment Grade Bonds	2.99%	0.32%
TIPs	8.91%	0.15%
High-Yield Bonds	7.92%	2.69%

The assumed long-term rate of return of 6.50% is based on the above asset allocation. Subsequent to the end of the measurement period there was a reallocation of assets which moved the portfolio away from equities and toward bonds. Had this future allocation been in place as of June 30, 2021, the assumed long-term rate of return would have been lowered by 50 basis points to 6.00%. In light of this, we recommend that the Board consider a liability-driven investment policy which recognizes that OPEB benefit payments are not being made from the Trust. This gives the Trust a much longer investment horizon than would be found in a pension plan, for example.

Schedule of Changes in OPEB Trust Net OPEB Liability and Related Ratios – GASB 74

(Amounts in Thousands)

Fiscal Year *	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
TOTAL OPEB LIABILITY										
Service cost	14,360	9,224	8,456	8,639	8,975					
Interest	6,772	8,624	8,618	10,228	9,135					
Change of benefit terms	0	0	0	0	0					
Differences between expected and actual experience	0	1,341	(5,652)	(41,501)	0					
Change of assumptions	(2,368)	31,172	6,899	(8,507)	0					
Benefit payments	(6,739)	(6,361)	(6,405)	(6,370)	(6,797)					
Net change in Total OPEB Liability	12,024	44,000	11,915	(37,511)	11,314					
Total OPEB Liability - beginning	252,494	208,494	196,579	234,089	222,775					
Total OPEB Liability - ending	264,518	252,494	208,494	196,579	234,089					
PLAN FIDUCIARY NET POSITION										
Contributions - employer	7,676	7,298	7,307	7,270	7,640					
Contributions - employee	0	0	0	0	0					
Net Investment Income	4,466	407	766	753	1,174					
Benefit payments	(6,739)	(6,361)	(6,405)	(6,370)	(6,797)					
Administrative expense	0	0	0	0	0					
Other	0	0	0	0	0					
Net change in Plan Fiduciary Net Position	5,402	1,344	1,668	1,653	2,017					
Plan Fiduciary Net Position - beginning	15,866	14,522	12,854	11,201	9,184					
Plan Fiduciary Net Position - end	21,268	15,866	14,522	12,854	11,201					
Town of Arlington Net OPEB Liability – ending	243,250	236,628	193,972	183,725	222,888					
Plan Fiduciary Net Position as a percentage of the Total OPEB Liability	8.0%	6.3%	7.0%	6.5%	4.8%					
Money-Weighted Rate of Return	26.72%	2.64%	5.33%	6.24%	11.52%					

Schedule of Plan Contributions - GASB 74

Plan Year-End of June 30,	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Actuarially Determined Contribution	NA	NA	NA	\$12,177	\$18,409					
Contributions in relation to the Actuarially Determined Contribution	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>(\$7,270)</u>	<u>(\$7,665)</u>					
Contribution deficiency / (excess)	NA	NA	NA	\$4,907	\$10,744					

There is no requirement that an actuarially determined contribution (ADC) be calculated. There is no statutory ADC, and the Town of Arlington is currently not funding the OPEB liability on an actuarial basis. Therefore, Stone Consulting, Inc. has not calculated an ADC for Fiscal 2021.

Funding Schedule

GASB Statement No. 74, Paragraph 34 b. (3) - Money-Weighted Rate of Return

	NET EXTERNAL CASH FLOW				
	Beginning of month	Middle of Month	End of Month	Periods Invested**	Cash Flow with Return
Starting Value* (7/1/2020)	\$ 15,865,945.94			12	\$ 20,104,535.98
Cash Flows:					
July			936,532.00	11	1,163,541.02
August				10	0.00
September				9	0.00
October				8	0.00
November				7	0.00
December				6	0.00
January				5	0.00
February				4	0.00
March				3	0.00
April				2	0.00
May				1	0.00
June				0	0.00
Ending Value* (6/30/2021)	\$ 21,268,077.00			Sum:	\$ 21,268,077.00

* Value shown does not include any payables or receivables, except those related to investments.

** Middle of period cash flows are given an additional half period of interest, and beginning of period cash flows are given an additional full period.

Return Rate: 26.72%

Changes in the Net OPEB Liability [GASB 75, Paragraph 55]

	Total OPEB Liability (a)	Plan Fiduciary Net Position (b)	Net OPEB Liability (a) - (b)
Balances at beginning of Measurement Period (07/01/2020)	\$ 252,494,363	\$ 15,865,946	\$ 236,628,417
Changes for the Year:			
Service Cost	14,360,031		14,360,031
Interest	6,771,556		6,771,556
Change in benefit terms	0		0
Differences between expected and actual experience	0		0
Change in assumptions	(2,368,129)		(2,368,129)
Contributions - employer		7,676,012	(7,676,012)
Contributions - employee		0	0
Net investment income		4,465,599	(4,465,599)
Benefit payments, including refunds of employee contributions	(6,739,480)	(6,739,480)	0
Administrative expense		0	0
Other changes		0	0
Net Changes	<u>12,023,978</u>	<u>5,402,131</u>	<u>6,621,847</u>
Balances at end of Measurement Period (06/30/2021)	\$ 264,518,341	\$ 21,268,077	\$ 243,250,264

NOTE: Amounts shown in this report may not total due to rounding

Update procedures were used to roll the Total OPEB Liability from the valuation date (01/01/2020) to the beginning of the measurement period (07/01/2020) and to the measurement date (06/30/2021). [GASB Statement No. 75, Paragraph 28]

Plan Fiduciary Net Position as a percentage of Total OPEB Liability	8.0%
Covered Employee Payroll *	\$79,793,330
Net OPEB Liability as a percentage of payroll	304.9%

* Fiscal Year 2021 pensionable payroll.

Projection of the Net OPEB Liability

TOTAL OPEB LIABILITY (TOL)

The Total OPEB Liability at the beginning of the measurement period (07/01/2020) is equal to the Actuarial Accrued Liability (AAL) rolled from 01/01/2020. Any differences between the projected amount and the actual value that are not the result of changes in assumptions or plan provisions are recognized as "Differences between expected and actual experience." GASB Statement No. 75, Paragraph 42 requires that the AAL be calculated under the Entry Age Normal Cost Method. The components of the AAL (calculated as of 01/01/2020 at a discount rate of 2.62%) are as follows:

Actives	\$ 129,271,670
Retirees, Disabled, Beneficiaries, and Vested Terminated	114,351,897
Total	\$ 243,623,567

The TOL is projected to the end of the measurement period (06/30/2021) by adding the changes resulting from experience, assumption changes, and changes to plan provisions. Interest is given to the TOL, Service Cost, and paid benefits, and added to the total, less the projected benefit payments for the year. Changes due to expected and actual gains on plan assets will be recognized over a five-year period [GASB Statement No. 75, Paragraph 43b], and liabilities arising from changes in plan structure or assumptions will be spread over the average of the expected remaining service lives of all employees that are provided with OPEB through the OPEB plan (active employees and inactive employees) [GASB Statement No. 75, Paragraph 43a]. Changes in plan provisions are recognized immediately.

PLAN FIDUCIARY NET POSITION (FNP)

GASB Statement No. 75 requires that the Fair Value of Assets be used for the Fiduciary Net Position. We have used the Market Value of Assets, adjusted for payables and receivables. Net investment income is the portion of the change in assets during the measurement period that is not attributed to employee/employer contributions, benefits payments, administrative expense, or other changes.

The projected Net OPEB Liability (NOL) for the end of the year is the portion of the TOL not covered by the FNP.

OPEB Expense Components

Components of Town of Arlington's OPEB Expense for the Fiscal Year ended June 30, 2021 [GASB 75, Paragraph 43] are shown below.

NOTE*	Description	Fiscal 2021	Fiscal 2020
A	Service Cost	\$ 14,360,031	\$9,224,359
A, B	Interest	6,771,556	8,624,415
C	Differences between Expected and Actual Experience	(675,733)	(675,733)
D	Changes of Assumptions	5,595,944	5,967,124
D	Changes to Benefit Provisions	0	0
E	Projected Earnings on Plan Investments	(419,789)	(602,610)
F	Differences between Projected and Actual Earnings on Plan Investments	(860,745)	(51,583)
A	Administrative Expense	0	0
A	Other Changes in Fiduciary Net Position	0	0
	Total OPEB Expense	\$ 24,771,263	22,485,971

* Notes shown on page 14. Amounts are based on the following dates:

- **Valuation date:** January 1, 2020
- **Measurement date:** June 30, 2021
- **Reporting date:** June 30, 2021

CHANGES IN METHODS, ASSUMPTIONS, AND PLAN PROVISIONS

The discount rate was changed from 2.57% To 2.62%.

NOTES

- A. See the RSI schedule of changes to the Net OPEB Liability, on page 11.
- B. Events that impact the Total OPEB Liability are assumed to happen evenly throughout the period. In addition, the amount of interest is calculated using an interest rate equal to the discount rate that was used to determine the service cost. The amount is determined as follows:

Description	Amount for Period (a)	Portion of Period (b)	Interest Rate (c)	Interest on the Total OPEB Liability (a) x (b) x (c)
Beginning Total OPEB Liability	\$ 252,494,363	100%	2.57%	\$ 6,489,105
Service cost	14,360,031	100%	2.57%	369,053
Benefit payments	\$ (6,739,480)	50%	2.57%	(86,602)
Interest				\$ 6,771,556

- C. Differences between expected and actual experience recognized in the current period in accordance with paragraph 43a of Statement 75. For the detailed calculation of this amount, see the schedule on page 16.
- D. Assumption and plan provision changes recognized in OPEB Expense in the current period in accordance with paragraph 43a of Statement 75. For detailed calculations of these amounts, see the schedule on page 16.
- E. Changes in the amounts invested are assumed to occur evenly throughout the period. In addition, the amount of projected earnings on plan investments is calculated using the assumed rate of return on plan investments as of the beginning of the period. The amount is determined as follows:

Description	Amount for Period (a)	Portion of Period (b)	Projected Rate of Return (c)	Projected Earnings (a) x (b) x (c)
Beginning plan Fiduciary Net Position	\$ 15,865,946	100%	2.57%	\$ 407,755
Employer contributions	7,676,012	50%	2.57%	98,637
Employee contributions	0	50%	2.57%	0
Benefit payments	(6,739,480)	50%	2.57%	(86,602)
Administrative expense	0	50%	2.57%	0
Total projected earnings				\$ 419,789
Actual earnings				4,465,599
Difference between projected and actual earnings				\$ (4,045,810)

Differences between projected and actual earnings recognized in the current period in accordance with paragraph 43b of Statement 75. For detailed calculation of this amount, see the schedule on page 16.

OPEB Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to OPEB
[GASB 75, Paragraph 56 h.]

	Deferred Outflows Of Resources	Deferred Inflows Of Resources
Differences between expected and actual experience	\$ 920,716	\$ (2,994,484)
Changes of assumptions	25,054,721	(1,996,949)
Net difference between projected and actual earnings on plan investments	<u>0</u>	<u>(3,249,616)</u>
Total	\$ 25,975,438	\$ (8,241,050)

Year Ending June 30, *	Recognition
2022	\$ 4,059,466
2023	4,110,571
2024	4,150,142
2025	3,989,939
2026	1,565,320
Thereafter	(141,048)

*The years are based on measurement date of June 30, 2021. For GASB 75, the reporting date is the same as the measurement date.

Increase / (Decrease) in OPEB Expense Arising from the Recognition of Gains and Losses – GASB 75

Increase / (Decrease) in OPEB Expense Arising from the Recognition of the Effects of Differences between Expected and Actual Experience

Fiscal Year	Differences between actual and expected experience	Recognition period (years)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
2018	\$ -	6.38	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2019	\$ (5,652,311)	6.38	\$ (885,942)	\$ (885,942)	\$ (885,942)	\$ (885,942)	\$ (885,942)	\$ (885,942)	\$ (336,658)	\$ -	\$ -	\$ -
2020	\$ 1,341,135	6.38		\$ 210,209	\$ 210,209	\$ 210,209	\$ 210,209	\$ 210,209	\$ 210,209	\$ 79,880	\$ -	\$ -
2021	\$ -	6.38			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net increase (decrease) in OPEB expense			\$ (885,942)	\$ (675,733)	\$ (675,733)	\$ (675,733)	\$ (675,733)	\$ (675,733)	\$ (126,449)	\$ 79,880	\$ -	\$ -

Increase / (Decrease) in OPEB Expense Arising from the Recognition of the Effects of Changes of Assumptions

Fiscal Year	Change of assumptions	Recognition period (years)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
2018	\$ -	6.38	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2019	\$ 6,898,573	6.38	\$ 1,081,281	\$ 1,081,281	\$ 1,081,281	\$ 1,081,281	\$ 1,081,281	\$ 1,081,281	\$ 410,887	\$ -	\$ -	\$ -
2020	\$ 31,171,677	6.38		\$ 4,885,843	\$ 4,885,843	\$ 4,885,843	\$ 4,885,843	\$ 4,885,843	\$ 4,885,843	\$ 1,856,620	\$ -	\$ -
2021	\$ (2,368,129)	6.38			\$ (371,180)	\$ (371,180)	\$ (371,180)	\$ (371,180)	\$ (371,180)	\$ (371,180)	\$ (141,048)	\$ -
Net increase (decrease) in OPEB expense			\$ 1,081,281	\$ 5,967,124	\$ 5,595,944	\$ 5,595,944	\$ 5,595,944	\$ 5,595,944	\$ 4,925,549	\$ 1,485,440	\$ (141,048)	\$ -

Increase/(Decrease) in OPEB Expense Arising from the Recognition of Differences between Expected and Actual Earnings on OPEB Plan Investments

Fiscal Year	Differences between projected and actual earnings on OPEB plan investments	Recognition period (years)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
2018	\$ (255,524)	5	\$ (51,105)	\$ (51,105)	\$ (51,105)	\$ (51,105)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2019	\$ (197,856)	5	\$ (39,571)	\$ (39,571)	\$ (39,571)	\$ (39,571)	\$ (39,571)	\$ -	\$ -	\$ -	\$ -	\$ -
2020	\$ 195,464	5		\$ 39,093	\$ 39,093	\$ 39,093	\$ 39,093	\$ 39,093	\$ -	\$ -	\$ -	\$ -
2021	\$ (4,045,810)	5			\$ (809,162)	\$ (809,162)	\$ (809,162)	\$ (809,162)	\$ (809,162)	\$ -	\$ -	\$ -
Net increase (decrease) in OPEB expense			\$ (90,676)	\$ (51,583)	\$ (860,745)	\$ (860,745)	\$ (809,640)	\$ (770,069)	\$ (809,162)	\$ -	\$ -	\$ -

Deferred Outflows and Deferred Inflows of Resources Arising from Gains and Losses

Deferred Outflows and Deferred Inflows of Resources Arising from Differences between Expected and Actual Experience

				BALANCES AT JUNE 30, 2021	
Fiscal Year	Experience Losses (a)	Experience Gains (b)	Amounts Recognized in OPEB Expense through June 30,	Deferred Outflows of Resources	Deferred Inflows of Resources
2018	\$ -	\$ -	\$ -	\$ -	\$ -
2019	\$ -	\$ (5,652,311)	\$ (2,657,826)	\$ -	\$ (2,994,484)
2020	\$ 1,341,135	\$ -	\$ 420,418	\$ 920,716	\$ -
2021	\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL				\$ 920,716	\$ (2,994,484)

Deferred Outflows and Deferred Inflows of Resources Arising from Changes of Assumptions

				BALANCES AT JUNE 30, 2021	
Fiscal Year	Increases in the Total OPEB Liability (a)	Decreases in the Total OPEB Liability (b)	Amounts Recognized in OPEB Expense through June 30,	Deferred Outflows of Resources	Deferred Inflows of Resources
2018	\$ -	\$ -	\$ -	\$ -	\$ -
2019	\$ 6,898,573	\$ -	\$ 3,243,843	\$ 3,654,730	\$ -
2020	\$ 31,171,677	\$ -	\$ 9,771,686	\$ 21,399,991	\$ -
2021	\$ -	\$ (2,368,129)	\$ (371,180)	\$ -	\$ (1,996,949)
TOTAL				\$ 25,054,721	\$ (1,996,949)

Deferred Outflows and Deferred Inflows of Resources Arising from Differences between Expected and Actual Earnings on OPEB Plan Investments

				BALANCES AT JUNE 30, 2021	
Fiscal Year	Investment Earnings Less than	Investment Earnings More than	Amounts Recognized in OPEB Expense through June 30,	Deferred Outflows of Resources	Deferred Inflows of Resources
2018	\$ -	\$ (255,524)	\$ (204,419)	\$ -	\$ (51,105)
2019	\$ -	\$ (197,856)	\$ (118,713)	\$ -	\$ (79,142)
2020	\$ 195,464	\$ -	\$ 78,186	\$ 117,279	\$ -
2021	\$ -	\$ (4,045,810)	\$ (809,162)	\$ -	\$ (3,236,648)
TOTAL				\$ 117,279	\$ (3,366,895)
NET TOTAL					\$ (3,249,616)

Results by Employer

Employer	Proportion	Contributions made FY 2021 ¹	Proportionate Share of OPEB Expense ²
Town of Arlington	98.18%	\$ 7,536,308	\$ 24,448,122
Water and Sewer	1.27%	\$ 97,485	\$ 266,346
Recreation	0.47%	\$ 36,077	\$ 21,081
Ed Burns Arena	0.08%	\$ 6,141	\$ 35,714
TOTAL	100.00%	\$ 7,676,012	\$ 24,771,263

		Proportionate share of NOL Discount Sensitivity (in 1,000's)	
Employer	Proportionate Share of NOL	1% Increase (3.62%)	1% Decrease (1.62%)
Town of Arlington	\$ 238,823,110	\$ 201,470	\$ 286,344
Water and Sewer	\$ 3,089,278	\$ 2,606	\$ 3,704
Recreation	\$ 1,143,276	\$ 964	\$ 1,371
Ed Burns Arena	\$ 194,600	\$ 164	\$ 233
TOTAL	\$ 243,250,264	\$ 205,204	\$ 291,652

Employer	Change in NOL due to Change in Proportionality	Proportionate Share of Deferred Outflows of Resources ³	Proportionate Share of Deferred Inflows of Resources ³
Town of Arlington	\$ 816,771	\$ 26,191,436	\$ (8,092,486)
Water and Sewer	\$ (309,239)	\$ 330,858	\$ (365,431)
Recreation	\$ (609,005)	\$ 122,573	\$ (552,282)
Ed Burns Arena	\$ 101,473	\$ 106,348	\$ (6,629)
TOTAL	\$ -	\$ 26,751,216	\$ (9,016,828)

¹ Cash contributions made to OPEB trust plus retiree premiums and a share of the implicit subsidy. The implicit subsidy is allocated since the Enterprise Funds have made premium payments for active members. Similar to last year, these exhibits do not show amounts for Council on Aging and Youth Services since these entities do not make health benefits payments.

² Includes amortization of current and prior changes in proportionality.

³ Deferred Outflows and Inflows by Employer include deferred recognition of the changes in proportionality. Because of this, the total Deferred Outflows and total Deferred Inflows will not match those shown on page 15. They are only equal in total.

SECTION II - ACTUARIAL VALUATION DETAILS

Population Data

A. DISTRIBUTION BY AGE: RETIREES, BENEFICIARIES, AND SURVIVORS
(Includes retirees with life only and retirees receiving opt-out subsidies)

Age	Total
0-19	0
20-24	0
25-29	0
30-34	2
35-39	1
40-44	2
45-49	4
50-54	11
55-59	25
60-64	60
65-69	150
70-74	281
75-79	209
80-84	134
85-89	99
90-94	51
95-99	12
100+	4
TOTAL	1,045

Includes retirees with life only and/or opt-out benefits in addition to terminated vesteds, beneficiaries, and survivors with medical coverage.

B. ACTIVE PARTICIPANTS

OF PARTICIPANTS*

Current Plan	Mandatory Medicare Eligible	Pre-Mandatory Medicare Eligible	Total
No Medical/ Unknown	505	0	505
Indemnity	14	1	15
Managed Care	832	9	841
TOTAL	1,351	10	1,361

* "Pre-Mandatory Medicare eligible" means hired March 31, 1986 or before. "Mandatory Medicare eligible" means hired after March 31, 1986. Employees hired March 31, 1986 or before do not contribute to Medicare.

C. PLAN DEFINITION TABLE⁽¹⁾

Name of Plan	Type of Plan	Ind Rate	Retirees Enrolled	Fam Rate	Retirees Enrolled	EE Cont % ⁽²⁾
Allways	Commercial Managed Care	\$646.93	2	\$1,677.69	2	15.00%
Fallon Direct	Commercial Managed Care	\$600.68	1	\$1,514.23	1	15.00%
Fallon Select	Commercial Managed Care	\$811.79	4	\$1,971.89	0	15.00%
Harvard Pilgrim	Commercial Managed Care	\$889.65	31	\$2,171.49	7	20.00%
Harvard Prim Choice	Commercial Managed Care	\$645.80	6	\$1,646.48	10	15.00%
Tufts Navigator	Commercial Managed Care	\$747.76	21	\$1,822.08	15	20.00%
Tufts Spirit	Commercial Managed Care	\$565.91	2	\$1,358.94	4	15.00%
Unicare Comm Choice	Commercial Managed Care	\$517.51	2	\$1,276.96	3	20.00%
Unicare Plus	Commercial Managed Care	\$696.10	8	\$1,654.60	8	20.00%
Unicare Basic	Commercial Indemnity	\$1,086.10	19	\$2,406.59	6	25.00%
Tufts Med Prefer Senior Plan	Medicare Managed Care	\$322.43	53	\$322.43	NA	15.00%
Harvard Medicare Senior Plan	Medicare Indemnity	\$391.12	321	\$391.12	NA	25.00%
Tufts Med Compliment	Medicare Indemnity	\$371.50	95	\$371.50	NA	25.00%
Unicare OME	Medicare Indemnity	\$386.93	348	\$386.93	NA	25.00%
Life	Life Insurance	\$9.90	483	NA	NA	50%

⁽¹⁾ Rates at 01/01/2020. Only plans with retiree enrollment shown.

⁽²⁾ Contribution rate is 25% for employees hired after 12/1/11; contribution rate for survivors is 50% for all plans.

C. DISTRIBUTION BY AGE AND SERVICE: ACTIVE PARTICIPANTS

Age Group	0-4	5-9	10-15	15-19	20-24	25-29	30-34	35-39	40+	Total
0-19	0	0	0	0	0	0	0	0	0	0
20-24	61	0	0	0	0	0	0	0	0	61
25-29	157	11	0	0	0	0	0	0	0	168
30-34	125	44	12	0	0	0	0	0	0	181
35-39	72	39	41	7	0	0	0	0	0	159
40-44	46	38	32	38	0	0	0	0	0	154
45-49	52	36	21	27	16	1	0	0	0	153
50-54	40	41	26	18	21	15	9	0	0	170
55-59	34	29	34	15	12	10	5	2	0	141
60-64	18	11	17	18	15	7	13	2	0	101
65-69	9	10	12	9	4	2	3	1	1	51
70-74	5	3	3	2	1	0	0	1	1	16
75-79	0	0	0	1	1	0	1	0	0	3
80-84	0	0	0	0	0	0	0	0	2	2
85-89	0	0	0	0	0	0	0	0	0	0
90-94	0	0	0	0	0	0	0	1	0	1
95-99	0	0	0	0	0	0	0	0	0	0
100+	0	0	0	0	0	0	0	0	0	0
TOTAL	619	262	198	135	70	35	31	7	4	1,361

SECTION III – APPENDICES

Actuarial methods and assumptions were selected by the Town of Arlington, other than those required by statute or by GASB statements, with guidance from Stone Consulting, Inc.

Actuarial Methods

Actuarial Cost Method

Costs are attributed between past and future service using the Entry Age Normal cost method. For attribution purposes, benefits are assumed to accrue over all employee service until decrement.

Asset Valuation Method

Market value of assets with payables and receivables.

Actuarial Assumptions

Valuation Date

January 1, 2020

Interest Rate / Discount Rate

- 2.62% per year net of investment expenses as of 06/30/2021. In the calculation of the discount rate, the 20-year Municipal General Obligation bonds as shown in the Bond Buyer 20 Bond Index (2.16%) and a long-term rate of return of 6.50% were used.
- 2.57% per year as of 07/01/2020. (Bond rate of 2.21% and long-term rate of 6.75%)

Mortality

- **Actives:** The RP-2014 Mortality Tables adjusted to 2006, sex-distinct, for Employees projected using generational mortality and scale MP-2019.
- **Retirees:** The RP-2014 Mortality Tables adjusted to 2006, sex-distinct, for Healthy Annuitants projected using generational mortality and scale MP-2019.
- **Disabled:** The RP-2014 Mortality Tables adjusted to 2006, sex-distinct, for Healthy Annuitants projected using generational mortality and scale MP-2019. Set forward 2 years.

No additional mortality projection is assumed other than as described above.

Eligibility for Vested Post-Retirement Medical Benefits upon Withdrawal

10 years of Service; assumed that individuals who withdraw prior to age 40 will elect a return of pension contributions and therefore be ineligible for retiree medical coverage.

Actuarial Assumptions (Continued)

Salary Increases

Select and Ultimate assumption, based on years of credited service:

- Groups 1 and 2: 7.75% increases for the first 6 years of service; 4.00% increases thereafter
- Group 4: 5.00% increase in year 5, 4.99% in year 10, 4.98% in year 15, 4.971% in year 20, and 4.962% in year 25; 4.00% increases in all other years

Step increases are assumed to be part of the salary increase assumption.

Teachers – Increases are based on service as shown below.

Service	Teachers
0	7.50%
1	7.10%
2	7.00%
3	6.90%
4	6.80%
5	6.70%
6	6.60%
7	6.50%
8	6.30%
9	6.10%
10	5.90%
11	5.70%
12	5.20%
13	4.70%
14	4.35%
15-16	4.20%
17-19	4.10%
20+	4.00%

Overall payroll increase rate, including new entrants: 4.00% per year.

Inflation

- CPI-U of 2.50% per year.

Actuarial Assumptions (Continued)

Withdrawal Prior to Retirement, Non-Teachers

Based on years of service. Same for both pre- and post-April 1, 2012 (Tier 1 and Tier 2) hires.

Years of Service	Groups 1,2	Group 4
0	15.00%	1.50%
1	12.00%	1.50%
2	10.00%	1.50%
3	9.00%	1.50%
4	8.00%	1.50%
5	7.60%	1.50%
6	7.50%	1.50%
7	6.70%	1.50%
8	6.30%	1.50%
9	5.90%	1.50%
10	5.40%	1.50%
11	5.00%	0.00%
12	4.60%	0.00%
13	4.10%	0.00%
14	3.70%	0.00%
15	3.30%	0.00%
16	2.00%	0.00%
17	2.00%	0.00%
18	2.00%	0.00%
19	2.00%	0.00%
20	2.00%	0.00%
21	1.00%	0.00%
22	1.00%	0.00%
23	1.00%	0.00%
24	1.00%	0.00%
25	1.00%	0.00%
26	1.00%	0.00%
27	1.00%	0.00%
28	1.00%	0.00%
29	1.00%	0.00%
30+	0.00%	0.00%

Actuarial Assumptions (Continued)

Withdrawal Prior to Retirement, Teachers

Same for both pre and post-April 1, 2012 hires.

		Service			
		Age	0	5	10
Male Teachers	25	13.00%	5.50%	1.50%	
	35	13.30	5.30	1.50	
	45	14.00	7.00	2.20	
	55	24.60	6.50	2.50	
Female Teachers	25	10.00%	7.00%	5.00%	
	35	11.00	7.00	3.00	
	45	9.80	4.00	2.10	
	55	13.80	6.00	2.00	

Disability Prior to Retirement

The rates shown at the following sample ages illustrate the assumption regarding the incidence of disability. Disability is assumed to be 50% ordinary and 50% accidental for Groups 1 and 2, 10% ordinary and 90% accidental for Group 4, and 55% ordinary and 45% accidental for Teachers.

Rate of Disability			
Age	Groups 1 and 2	Group 4	Teachers
20	0.01%	0.10%	0.004%
25	0.02%	0.20%	0.005%
30	0.03%	0.30%	0.006%
35	0.06%	0.30%	0.006%
40	0.10%	0.30%	0.010%
45	0.15%	1.00%	0.030%
50	0.19%	1.25%	0.050%
55	0.24%	1.20%	0.080%
60	0.28%	0.85%	0.100%

Medicare Eligibility

- **Employees:** 100% if hired March 31, 1986 or after; 85% if hired pre-March 31, 1986.
- **Spouses:** 100%

Actuarial Assumptions (Continued)

Rates of Retirement, Non-Teachers

Based on gender, group, and hire date.

	Hired Pre-April 2, 2012			Hired Post-April 1, 2012		
Age	Groups 1 and 2 Male	Groups 1 and 2 Female	Group 4	Groups 1 and 2 Male	Groups 1 and 2 Female	Group 4
50	1.00%	1.50%	2.00%	-	-	-
51	1.00%	1.50%	2.00%	-	-	-
52	1.00%	2.00%	2.00%	-	-	-
53	1.00%	2.50%	5.00%	-	-	-
54	2.00%	2.50%	7.50%	-	-	-
55	2.00%	5.50%	15.00%	-	-	10.00%
56	2.50%	6.50%	10.00%	-	-	7.00%
57	2.50%	6.50%	10.00%	-	-	20.00%
58	5.00%	6.50%	10.00%	-	-	10.00%
59	6.50%	6.50%	15.00%	-	-	15.00%
60	12.00%	5.00%	20.00%	25.00%	30.00%	20.00%
61	20.00%	13.00%	20.00%	20.00%	13.00%	20.00%
62	30.00%	15.00%	25.00%	30.00%	15.00%	25.00%
63	25.00%	12.50%	25.00%	25.00%	12.50%	25.00%
64	22.00%	18.00%	30.00%	22.00%	18.00%	30.00%
65	40.00%	15.00%	100.00%	40.00%	15.00%	100.00%
66	25.00%	20.00%	NA	25.00%	20.00%	NA
67	25.00%	20.00%	NA	25.00%	20.00%	NA
68	30.00%	25.00%	NA	30.00%	25.00%	NA
69	30.00%	20.00%	NA	30.00%	20.00%	NA
70	100.00%	100.00%	NA	100.00%	100.00%	NA

Actuarial Assumptions (Continued)

Rates of Retirement, Teachers

Based on gender, years of service, and hire date.

Age	Hired Pre-April 2, 2102						Hired Post-April 1, 2012					
	<20 years Service		20-29 years service		>29 years service		<20 years service		20-29 years service		>29 years service	
	M	F	M	F	M	F	M	F	M	F	M	F
50	N/A	N/A	1%	1%	2%	1.5%	N/A	N/A	N/A	N/A	N/A	N/A
51	N/A	N/A	1	1	2	1.5	N/A	N/A	N/A	N/A	N/A	N/A
52	N/A	N/A	1	1	2	1.5	N/A	N/A	N/A	N/A	N/A	N/A
53	N/A	N/A	1.5	1	2	1.5	N/A	N/A	N/A	N/A	N/A	N/A
54	N/A	N/A	2.5	1	2	2	N/A	N/A	N/A	N/A	N/A	N/A
55	5%	3%	3	3	6	5	N/A	N/A	N/A	N/A	N/A	N/A
56	5	3	6	3	20	15	N/A	N/A	N/A	N/A	N/A	N/A
57	5	4	10	8	40	35	N/A	N/A	N/A	N/A	N/A	N/A
58	5	8	15	10	50	35	N/A	N/A	N/A	N/A	N/A	N/A
59	10	8	20	15	50	35	N/A	N/A	N/A	N/A	N/A	N/A
60	10	10	25	20	40	35	10%	10%	25%	20%	40%	35%
61	20	12	30	25	40	35	20	12	30	25	40	35
62	20	12	35	30	35	35	20	12	35	30	35	35
63	25	15	40	30	35	35	25	15	40	30	35	35
64	25	20	40	30	35	35	25	20	40	30	35	35
65	25	25	40	40	35	35	25	25	40	40	35	35
66	30	25	30	30	40	35	30	25	30	30	40	35
67	30	30	30	30	40	30	30	30	30	30	40	30
68	30	30	30	30	40	30	30	30	30	30	40	30
69	30	30	30	30	40	30	30	30	30	30	40	30
70	100	100	100	100	100	100	100	100	100	100	100	100

Actuarial Assumptions (Continued)

Plan Enrollment Rates

These are the rates which retirees select medical plans, given that they enroll in a medical plan. The selection patterns follow the table below.

Participant Behavior at Key Ages

Status	Age	Pre-65 Retirement	65+ Retirement
Active	Under 65	Commercial Managed Care: 90% Commercial Indemnity: 10%	Medicare Managed Care: 7% Medicare Indemnity: 92% Commercial: <1%
Active	65+	NA	Medicare Managed Care: 7% Medicare Indemnity: 92% Commercial: <1%
Retired	Under 65	Current Plan	Medicare Managed Care: 7% Medicare Indemnity: 92% Commercial: <1% Or Actual Plan if already in Medicare
Retired	65+	NA	Current Plan

Sample Claim Costs

Age	Commercial Managed Care Individual	Commercial Managed Care Blended ⁽¹⁾	Commercial Indemnity Individual	Commercial Indemnity Blended ⁽¹⁾	Medicare Managed Care	Medicare Indemnity
55	\$9,525.23	\$19,067.94	\$8,982.44	\$18,398.65	\$2,623.61	\$3,946.75
60	\$11,694.88	\$23,384.11	\$10,914.53	\$22,356.12	\$2,623.61	\$3,946.75
65	\$14,592.06	\$17,392.51	\$13,523.30	\$16,249.52	\$2,623.61	\$3,946.75
70	\$17,624.84	\$21,007.32	\$16,333.54	\$19,626.29	\$3,085.47	\$4,353.85
75	\$21,123.03	\$25,176.70	\$19,571.92	\$23,517.50	\$3,740.35	\$4,698.13
80	\$25,136.83	\$29,960.81	\$23,291.55	\$27,986.99	\$4,472.43	\$4,946.11
85	\$25,136.83	\$29,960.81	\$23,291.55	\$27,986.99	\$5,281.71	\$5,058.78

⁽¹⁾ Blended rates below 65 are 65% Family and 35% Individual. Blended rates 65 and higher are 12.5% Family and 87.5% Individual. Individual rates are used for all participants 81 and higher.

Actuarial Assumptions (Continued)

Trend Rates by Plan

Year	Commercial Managed Care	Commercial Indemnity	Medicare Indemnity	Medicare Managed Care
2019	4.81%	7.22%	3.32%	0.84%
2020	8.00%	9.00%	8.00%	7.00%
2021	7.50%	8.50%	7.50%	6.50%
2022	7.00%	8.00%	7.00%	6.00%
2023	6.50%	7.50%	6.50%	5.50%
2024	6.00%	7.00%	6.00%	5.00%
2025	5.50%	6.50%	6.00%	5.00%
2026	5.00%	6.00%	6.00%	5.00%
2027	5.00%	6.00%	6.00%	5.00%
2028	5.00%	6.00%	6.00%	5.00%
2029	5.00%	6.00%	5.75%	5.00%
2030	5.00%	6.00%	5.75%	5.00%
2031	5.00%	5.75%	5.75%	5.00%
2032	5.00%	5.75%	5.50%	5.00%
2033	5.00%	5.75%	5.50%	5.00%
2034	5.00%	5.75%	5.50%	5.00%
2035	5.00%	5.75%	5.25%	5.00%
2036	5.00%	5.50%	5.25%	5.00%
2037	5.00%	5.50%	5.00%	5.00%
2038	5.00%	5.50%	5.00%	5.00%
2039	5.00%	5.50%	5.00%	5.00%
2040	5.00%	5.50%	5.00%	5.00%
2041	5.00%	5.25%	5.00%	5.00%
2042	5.00%	5.25%	5.00%	5.00%
2043	5.00%	5.25%	5.00%	5.00%
2044	5.00%	5.25%	5.00%	5.00%
2045	5.00%	5.25%	5.00%	5.00%
2046	5.00%	5.00%	5.00%	5.00%

No trend was applied to the subsidies for opt-outs.

Expenses

Administrative expenses are included in the per capita medical cost assumption.

Actuarial Assumptions (Continued)

Participation Rates

Current retirees and spouses are assumed to continue the same coverage they have as of the valuation date. No future election of coverage is assumed for those retirees and spouses who currently have not elected coverage.

Medical All Retirees: 85% of the active Town of Arlington employees eligible for post-employment medical benefits are assumed to elect Medical Coverage immediately upon retirement.

Life All Retirees: 65% of active Town of Arlington employees eligible for post-employment medical benefits are assumed to elect Life Insurance coverage immediately upon retirement.

Opt-out Benefit: 100% of the active employees listed by the Town of Arlington who do not have current medical coverage and meet the eligibility test were assumed to participate in the opt-out benefit.

For all Retirees: For the Town of Arlington plans 65% of spouses are assumed to participate.

Participants with no or unknown current coverage (e.g. active employees who do not currently participate in Town of Arlington's medical plans) are assumed to elect retiree coverage at the same rates as currently covered active employees. Medicare-eligible retirees currently under age 65 are assumed to elect a Medicare plan option at age 65.

PPACA

OPEB liabilities as of June 30, 2021 no longer include an estimate of the impact from the Patient Protection and Affordable Care Act (PPACA), including the so-called "Cadillac Tax" on high-cost health plans, as it has been repealed as of the measurement date. The Cadillac Tax on plans whose richness exceeds set levels was to begin in 2022.

Opt-out Eligibility

Active members with hire dates before July 1, 2011 who currently have medical coverage are assumed to be eligible for an opt-out benefit. Actives currently receiving an opt-out benefit are also assumed to be eligible. It is assumed that all eligible members will elect either medical or an opt-out benefit at retirement.

Principal Plan Provisions Recognized in Valuation

ELIGIBILITY FOR BENEFITS

Current retirees, beneficiaries and spouses of Town of Arlington are eligible for medical benefits, as are current employees or spouses who retire with a benefit from the Town of Arlington. Survivors of Town of Arlington employees and retirees are also eligible for medical benefits.

MEDICAL BENEFITS

Various medical plans offered by Town of Arlington to its own employees. In addition to these medical plans, The Town of Arlington pays an annual subsidy of \$2,000/individual and \$4,000/family for those opting out of medical coverage at retirement if they meet an eligibility test. To meet the eligibility test, an employee must have had coverage as of July 1, 2011.

LIFE INSURANCE

Town of Arlington retirees are eligible for a \$5,000 life insurance benefit offered by Town of Arlington. Retirees pay 50% of the \$9.90 cost.

RETIREE CONTRIBUTIONS

Based on data provided by Town of Arlington.

Glossary

- **Actuarial Assumptions:** Assumptions as to the occurrence of future events affecting Other Post-employment Benefits such as: mortality rates, disability rates, withdrawal rates, and retirement rates, the discount assumption, and the trend rates.
- **Actuarial Cost Method:** A procedure for determining the Actuarial Present Value of Total Projected benefits and for developing an actuarially equivalent allocation of such value to time periods, usually in the form of a Normal and an Actuarial Accrued Liability.
- **Amortization Payment:** The portion of the OPEB contribution designed to pay interest and to amortize the Unfunded Actuarial Accrued Liability.
- **Actuarially Determined Contribution (ADC):** The employer's periodic contributions to a defined benefit OPEB plan, calculated in accordance with the Actuarial Standards of Practice.
- **Cadillac Tax:** Under the Affordable Care Act and starting in 2022, a 40% excise tax on the value of employer-sponsored health benefits exceeding specified thresholds. This has been repealed.
- **Commercial Plans:** Plans designed to cover the medical expenses of those not otherwise covered by Medicare.
- **GASB:** The Governmental Accounting Standards Board is the organization that establishes financial reporting standards for state and local governments.
- **Investment return Assumptions (Discount Rate):** The rate used to adjust a series of future benefit payments to reflect the time value of money.
- **Healthcare Cost Trend Rate:** The rate of change in per capita health claims costs over time as a result of factors such as medical inflation, utilization of healthcare services, the intensity of the delivery of services, technological developments, and cost-shifting.
- **Medicare Plans:** Medical plans sold to those over 65 who are also covered by Medicare. These plans are supplemental to the Medicare plan, which is considered primary.
- **Net OPEB Liability:** The portion of the Total OPEB Liability that is not covered by plan assets. For a plan that is completely unfunded, this amount is equivalent to the Total OPEB Liability.
- **Normal Cost:** The portion of the Actuarial Present value of plan benefits that is allocated to a valuation year by the Actuarial Cost Method. Referred to as Service Cost in GASB valuations.

■ Town of Arlington

GASB Statements No. 74 and No. 75

- **OPEB:** Other Post-Employment Benefits, other than pensions. This does not include plans such as severance plans or sick-time buyouts.
- **Pay-As-You-Go:** The amount of benefits (claims) paid out to plan participants during the year.
- **Per Capita Claims Cost:** The current average annual cost of providing postretirement health care benefits per individual.
- **Service Cost:** The portion of the Actuarial Present value of plan benefits that is allocated to a valuation year by the Actuarial Cost Method. Referred to as Normal Cost in funding valuations.
- **Total OPEB Liability:** The portion, as determined by a particular Actuarial Cost Method, of the present value of benefits which is not provided for by future Service Costs.
- **Valuation Date:** The point from which all future plan experience is projected and as of which all present values are calculated.